THIS

SOUVENIR

of The

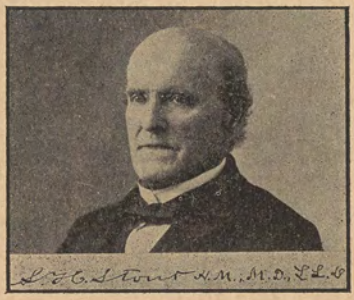
Re-Union of Confederates

Dallas, Texas.

April 22, 23, 24 and 25, 1902,

IS PRESENTED TO HIS COMRADES

BY



ÆT. 80,

WHO WAS SURGEON OF

COL. JNO. C. BROWN'S

(AFTERWARDS MAJ. GEN. AND GOVENOR)

THIRD TENN. REG.,

AND

MEDICAL DIRECTOR OF HOSPITALS

OF THE

ARMY AND DEPARTMENT OF TENN.

NOTES
ON
HODGE'S
LECTURES
ON
TOKOLOGY.
1842 — 3.

S. H. STOUT.

VOL. I

Preliminary Lecture Oct 29-31

Lecture 1. November 1st 2 5

This lecture after some preliminary remarks consisted of a description of the os innominatum. There are two symmetrical bones known by this name which form the lateral and anterior bony portions of the pelvis. They are very important in an obstetrical point of view. In infancy each bone is composed of three parts, viz the ilium, the ischium and the pubis. The ilium is described as a triangular bone. We are to notice the crista, the superior and inferior anterior spinous proceses, the superior and inferior posterior spinous proceses, the venter or the iliac fossa, the dorsum, the sigmoid surface, the linea ~~ileo-pectinea~~ ileo-pectinea a part of the linea ileo-pectinea, the part which assists in forming the great sacro-ischiatic notch, the inclination of the two portions above and below the linea ilia, the rounded surface for the passage of the psoas magnus and iliacus internus muscles, the junction between the ilium and pubis in front of this ~~bone~~ surface, the acetabulum of which it forms two fifths, and its junction with the ischium. — The ischium is to be studied as to its body, which is what is usually called the tuberosity, and its posterior ascending ramus and anterior ascending ramus. The body serves for the attachment of muscles and is that part on which we sit. The posterior ascending ramus is to be particularly noticed as to its internal surface which is called the plane of the pelvis ischium and which inclines downwards forwards and inwards, the spine of the ischium, the portion which assists in forming the acetabulum, about two fifths of that hollow. The anterior ascending ramus should be noticed as to its twist its curve and its junction with the descending ramus of the pubis. Between the two rami is a portion of the foramen ovale. The pubis should be studied as to its body

its horizontal and descending ramii. The body joins with its fellow of the opposite side by means of the symphysis pubis; the descending ramus forms an arch with its fellow and meets the ascending ramus of the ischium; it is twisted in the same manner with the ramus of the ischium, that is as if some body when the bone was in a soft state had been forcibly pressed through the space between it and the bone of the opposite side. The consequence of which is that there is a twisted ridge on the spout of the bone. The horizontal ramus proceeds laterally and backwards to join the ilium and the ischium in the acetabulum of which it forms the remaining fifth. On the outer side of the symphysis there is a horizontal surface which is rough and serves for the attachment of the internal portions of the tendons of the obliqui and recti muscles of the abdomen. On the upper surface of this ramus there is a triangular space the base of which is towards the acetabulum and the apex at the tuberosity, bounded by two lines or ridges. The posterior is the linea ileopectinea and is a part of the linea ileopectinea. The anterior serves for the origin of muscles of the thigh. The rami of the ischium and pubis form the foramen called ovale. The general figure of the os innominatum is that of the figure 8. The acetabulum is directly opposite the plane of the ischium.—

Lecture 11th November 9th, 42. 14/1901

The sacrum is that bone which forms the posterior portion of the pelvis; it is a continuation of the vertebral column; its form is somewhat of a truncated pyramid. The parts to be studied are, its upper extremity which is articulated with the last lumbar vertebra, its alae, its promontory, its sigmoid surface, its edge below that surface, its spinous and transverse processes, its foramina before and behind; its anterior foramina

Length of the crista of ilium 9 in of the chord of the curve 6½ in.

Ala Convex from above downwards - Concave from side to side

Lower end of Sacrum 3/4 inch wide hardly ½ inch antero posteriorly -

By symphisis we mean that it is where the cartilages remain through life
Cartilages which join the pubes anteriorly is thick posteriorly thin -
A number of little reddish bodies is found when you examine them interiorly
It is a closed joint that is when you examine it you will find a small cavity lined by its synovial membrane -

give exit to the great sciatic nerves. It originally consisted of five pieces which were provided with interarticular cartilages and surfaces like the true vertebrae, but they are fused together in the adult, the divisions between these pieces are however by four transverse lines. The sacrum is curved. The radius included between the curve and its cord is in general about ½ inch. Some subjects are as much as an inch. The whole depth of the pelvis that from the middle of crista of ilium is seven inches, the linea ileo pectinea being in the middle i.e. it is 3½ in. from the crista and from the tuberosity of the innominata. The sacrum is 4½ inches long; breadth across the alae 4 inches. From the promontory to the first spinous process it is 2½ inches. The little bones which are generally four attached to the apex of the sacrum are called the coccyx. From the promontory to the end of coccyx it is 5 inches. The angle of the promontory is about 135°. These are 4 articulations of the pelvis, viz the pubic, the 2 sacro-iliac and the sacro-coccygeal. The pubes are connected in the middle of the front of the pelvis by a fibro-cartilaginous substance, in the middle of which by tearing them apart, w. sex. a smooth ovate articular surface provided with a synovial membrane. The anterior pubic ligament is formed by the passing of the periosteum across the articulation. The posterior pubic ligament is formed in the same way. The pubo or inter-pubal ligament seems to be rather an extension of the ligament of the symphysis pubis and is of a triangular arched shape. The superior pubal ligament extends across and is formed of the same matter. The the sacro iliac articulation is furnished with numerous yellow ligaments which pass from ilium to the sacrum, all around the synovial surfaces called the sacro-iliac ligament, it is much stronger on the posterior face than on anterior of the sacrum

No motion of the Pelvis except at coccyx.

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Ilia. The latter place they just overlap from one bone to the other in a smoothed manner. The Sacro-spinous ligament consisting of two lamina passes from the posterior inferior spine of the ilium to the two last Sacral transverse processes of the sacrum. The superficial lamina to the 4th; the deep seated to the 3d. — The ilio-lumbar ligament arises from the transverse and inferior oblique processes of the last lumbar vertebra to be inserted into the crista just above the posterior superior spine of ilium. It serves to fill up the notch between the vertebral column and the ilium so as to make the boundary of the abdominal strait complete posteriorly. +

The Posterior sacro-sciatic ligament arises from the posterior inferior spine of the ilium and the margin of the sacrum below that bone, towards its back and runs downwards and outwards, to the tuberosity of the ischium. The fibres become narrower towards the middle and afterwards all expanded. The anterior sacro-sciatic ligament arises from the margin and a little back of the portion of the sacrum below the ilium crosses in front of the posterior ligament and is inserted in the spine of the ischium, the whole of which it embraces. There are sacro, coccygeal ligaments both in front and behind. — The sciatic notch is divided by ligaments into an oval hole, which admits the Pyriformis muscle, the Gluteal artery, internal pubic vessels and nerves, and the great sciatic nerve to passout of the pelvis, and a triangular one which is filled by the internal obturator muscle &c, and also the returning branches of the pubic vessels and nerves to recurr to be distributed upon the perineum. The articulations of the pelvis are such as in my opinion to preclude the possibility of gaining any practical advantage by the relaxation of ligaments, (which I do not believe ever takes place,) and afford a-

Tuberosity forms base of Pelvis -
Arch of Pubis forms Anterior part of Pelvis

Circumference of Superior Strait 13½

Height of Arch of Pubis ~~2 inches~~ 2 inches -

. ~~posterior~~, evidence that the symphysis pubis should not be cut in any case.

Lecture III Nov 11th 10 Nov 14/1901

The bony girdle denominated the pelvis is articulated in the manner described in the last lecture not for the purpose of permitting motion during the process of parturition, but to add to its elasticity. It is a rare occurrence for this circle to be broken. This elasticity is beautifully expressed by Baudelocque by the terms insensible motion. — The seldom speak of the pelvis without including in the general term its ligaments. — All that part of the pelvis above the linea ileo-pectinea and the promontory of the sacrum is called the superior pelvis. It is notched before and behind, the anterior notch is occupied by soft parts in the living subject. The bony circle of the abdominal or greater pelvis is not complete. The posterior notch is filled in a great degree by the sacro-lumbar ligaments. The lumbar vertebrae project into its cavity from the posterior notch. The child and uterus occupy the superior pelvis during pregnancy. It measures from one anterior superior spinous process of the ilium to the other, 9 inches, from the middle of one crista to the other 10 inches; its depth is 3½ inches. — The pelvis proper is that part of the bony circle already described which is below the abdominal or greater pelvis. It is larger above than below. By some it is said to be cylindrical, but it is rather of the shape of a truncated cone, of which the superior corresponds to the base and the inferior to the apex of the cone. All that cavity between the superior and inferior of the bony girdle is called the canal or the cavity of the pelvis. — The superior and inferior straits and also their axes must be carefully studied as they are of great practical importance. The antero-posterior diameter or the dorso-pubic extending from the promontory of the

1).

35° or 40°.

Circumference of inferior strait 12 in.

Axis of inferior strait strikes the first line of fingers — Arrow, 1st & 2nd bone of sacrum. It makes an angle of 15°. with axis of body —

sacrum to the symphysis pubis is 4 inches in length. This is the short diameter of the superior strait. The transverse or bis-iliac is 5¼ and the obliques extending from a point on the horizontal ramus of the pubis corresponding to the anterior of the acetabulum to the sacro-iliac junction are two in number each being 5 inches in length. The last three diameters are called the long diameters of that strait. The circumference of this strait is 13½ inches. The axis of the superior strait forms an angle with the axis of the body of 40°, and if extended would strike the extremity of the coccyx and the umbilicus. When the subject is supine it is nearly perpendicular to the horizon. — The inferior strait is irregular; its circumference has three notches in it, viz, the pubic arch and one on each side at the sacro sciatic ligament between the coccyx and the tuberosity of the ischium. It has four diameters of which the coccy pubic is the longest and measures 4 inches, which may be increased to 4½ by the bending or giving away of the coccyx, two obliques extending from the point where the rami of the ischium and pubis meet to the middle of the sacro-sciatic ligaments, each of which measure 4½ inches, and the bis-isotiatic which extends from one tuberosity of the ischium to the other measures 4 inches. — The axis of the inferior strait strikes about an inch below the promontory of sacrum and when extended downwards would touch the ground anterior to the axis of the body. The axes of the two straits incline to each other in an angle of 125°, some authors say 130°, 140°, and even 150°. The axis of the superior strait may be made to approach the axis of the body by bending the body forward and that of the inferior strait may be made to approach that of the body by bending the body backwards. — In the next lecture I will speak of the cavity or canal of the pelvis.

2½ inches from promontory of Sacrum. To Spinous Tubercle of same bone.

Sides of Pelvis approximate each other from above downwards.

Curve of the male catheter is about curve of Pelvis Therefore Child must pass through a curve line Axis of body. is continually varying. if bent forward. it approximates that of superior Strait

Lecture IV. Nov 14th Nov 21st 1861
Octo 21, 1861

The anterior portion of the cavity of the pelvis is much more shallow than that of the posterior. The arch of the pubis is said to be six inches from its top to a line drawn from one tuberosity to another. The length of this horizontal line which corresponds to the transverse diameter of the inferior strait is 4 in. The length of the line drawn from the middle of the arch of the pubis to the posterior of the ischium is 2½ or 3 inches. The side of the cavity is divided into two portions by the projection of the spine of the ischium. The one the anterior, the other the posterior inclined planes of the pelvis, these are very important.

They incline forwards and inwards. The anterior is much longer than the posterior. A perpendicular section through the spines of the ischium when the body is in the erect position will divide the pelvis at the junction of these two planes on each side. Thus regarded we see that they approximate each other below. They become narrower below. The dimensions of the cavity of the pelvis are important. Depth of the posterior wall 4½, by the giving way of the Os coccygis it may be increased about ½ inch. Depth of the lateral walls 3½ in. Depth of symphysis pubis 1½ in. It is important also to know the distances from one point in the inferior strait to another in the superior, in order that we may be able to ascertain whether the straits are of the proper dimensions, in the living subject. The distance from the top of the arch of the pubis to the promontory of the sacrum 4½; to the hollow of the sacrum 4¾, some say 5 inches. From tuberosity of the ischium on one side to the sacro-iliac symphysis of the other side 6 in. The cavity of the pelvis, may be compared to a cylinder curved so as to make the anterior circumferences of its bases approach each other. The axis of the pelvis may be considered as composed of broken lines, perpendicular to planes which approach each other at the anterior; or strictly speaking it is a curve the upper and lower extremities of which pierce the planes of the straits at right angles.

Lecture V.

The bones of the fœtus are divided in some instances by cartilag-

Bones of Foetus may bend without injury to child

Thorax seems to be the broadest. but for practical purposes we say that Head is broadest

under part incompressible.

Apophysis, A process, projection or protuberance of a bone beyond a plane surface; as, the nasal apophysis of the frontal bone.

Epiphysis, A portion of a bone growing in another but separated by cartilage.

Symphysis, Bones united by an intervening body, as sym chondrosis, sym sarcosis, syn neurosis and sin ostosis

inous bodies. Hence there are more epiphyses in the fetus than in the adult. The epiphyses are not united to the bodies of the bones in the fetus but by cartilage. The bones themselves, as has been demonstrated by Dr Barton of this city, have a great deal of cartilaginous matter in them so as to permit their bending without breaking. — Of the different cavities of the bony structure the head is the largest, the thorax next and the pelvis is the smallest. Each of them are compressible. The length of the foetus varies from 16 to 24 inches, but as a general rule it is from 18 to 20 inches. — The thorax measures in its transverse diameter, that is from the acromion process of one side to that opposite 4 inches. The great compressibility of it makes it much less, and it may be considered as 3 or 3½ inches. The antero-posterior diameter from the extremity of the sternum to the spinous processes of the vertebræ is 2½ or 3 inches. The pelvis is 3 inches in its transverse diameter, measured from one anterior superior spinous process to the other. Its antero-posterior diameter is 2 inches. — At the full period the head consists of as many bones as the adult. These bones are not as yet immovably joined together by serrated edges. They are kept together on the outside by a layer of periosteum and on the inside by the dura mater which is a dense fibrous tissue. They may even be made to overlap each other. The sagital suture is continued down the centre of the os frontis. The coronal suture is anterior posteriorly owing to the projecting off of the anterior angles of the parietal bones. — We frequently find at the base of the cranium a transverse suture, dividing the occipital bone, so as to permit it to move upon itself at this place as upon a hinge, throwing the anterior extremity under the parietal bones and thus frequently obliterating the posterior fontanel. The flexibility of these bones is so great as to permit considerable depression without fracture. The head is ovoid. From the occiput to the chin is its long diameter. Its transverse is from one parietal protuberance to the other. The central portion of the occipital and of the parietal is the vertex. — The fontanels are very important and should be well studied. The anterior is quadrangular and is formed by the cutting off of the anterior angles of the parietal bones, and the posterior and superior angles of the lateral halves of the os frontis.

Dr Hodge gives 8 presentations of Head -
Occiput Chin, Top Base Sides &c -

Vertex in common language is crown of Head -
in Obstetrical language - is parts immediately sur-
rounding Poterior fontanelle -

Prefers the name of cervico-bregmatic.

The two sides which form the anterior parts of it are long, those posterior are short. In consequence of this the anterior angle is smaller than the posterior. The sides are not straight, all of them being convex towards the centre of the fontanel. If we, in addition to these sides and angles, can feel the sutures running off from the angles we may be perfectly certain that it is the anterior fontanel. The posterior fontanel is triangular; it is frequently wanting; and when this is not the case it is frequently obliterated by the sliding of the occipital bone up under the parietal bones. But its position may always be ascertained by the angle made by the lamdoidal suture. This fontanel is the centre of the ovoid. The sagital suture meets the middles of these lamdoidal at this point. Besides these there are two anterior and inferior fontanels situated at the junction of the sphenoid bone with the parietal just anterior to the squamose portion of the temporal, at the extremity of the coronal suture. The posterior and inferior are situated just behind the mastoid process at the extremities of the lamdoidal suture. The little fontanels are of but little importance in the science of Obstetrics.

Lecture VI Nov 18th Nov 19, 1851

We proceed now to the consideration of the presentations of the head, that is of the particular portions and of the planes which may present themselves at the superior strait. These planes are sections of the head made by throughout the cranium of the foetus the plane of the superior strait through the most expanded portions of it, as it descends into the cavity of the pelvis. 1st Presentation of the Vertex; the diameters to be considered are the Bi parietal which extends from one parietal protuberance to the other and is 3½ inches, and the Occipito Bregmatic, extending from a point about midway between the occipital protuberance & and the posterior boundary of the foramen magnum to the top of the head which is considered to be a point at the posterior part of anterior fontanel or bregma 3½ inches. This is by far the most common presentation; but we must not considered as the only natural one. The farther you depart from this just so will your difficulties increase.

\ The prom calls this a presentation of the ante-
rior fontanelle. x Occipito-frontal.

Trachelo Bregmatic extends from fore part of neck
to Bregmatic 3½

Abroadlad be-malar.

Presentations & Planes

The plane considered in this presentation is nearly a circle its longest diameters being equal & its circumference is from 10 to 11 inches. 2nd Presentations of the Top of the head. The diameters of the plane of this are the Bi-parietal 3½ inches and the Antero-posterior extending from the forehead to the occipital protuberance 4 inches. This is an impracticable presentation. 3d Presentation of the Chin. Its diameters are the same with those of the vertical presentation, viz the Bi-parietal 3½ inches & the Occipito-bregmatic 3½ inches. This in the strict meaning of the phrase is of rare occurrence, but in all presentations of the body, it should take place. The chin should be upon the breast, and is most commonly there in those cases. Hence it is very common. 4th Face presentation that is when the ear is at the superior strait. The diameters are the Occipito-mental 5 inches i.e. from the occipital protuberance to a middle point of the chin, the Occipito-bregmatic 3½ ins., and the Trachelo-bregmatic extending from a point on the base of the skull about midway between the chin and the spine, corresponding to the upper part of the trachea in the child to the posterior portion of the anterior bregma 3½ inches. This is an impracticable presentation. 5th Base presentations. It is well enough to know the diameters of the base strictly considered, but they are not what we have to attend to in Cephalogy. Long diameter from the chin to the middle point between the foramen magnum and occipital protuberance 4½ inches, Transverse diameter, from one Zygoma to the other 2½ in. The distance between the mastoid processes is 2 in. But the plane which we must deal with is much larger and is above the base. Its diameters are the Occipito-mental 5 ins., and the Bi-parietal 3½ inches. This is also impracticable. 6th The Face. Its diameters are the Fronto-mental from the forehead to the chin 3 in, Transverse 3 inches. Bicinieters of the plane are Trachelo-bregmatic 3½ in and the Biparietal 3½ inches. Also think it important to add another the 7th Forehead presentation. The diameters are Bi-parietal 3½ in, and one Extending from the chin to the middle of the sagittal suture

Cervico Frontal

From frontal bone to the nape of the neck 4 in.

4½ in. The axes of these planes correspond to those of the straits as they pass through them.

Lecture VII Nov 2.2d. Nov 8th 1848.

To day we take up for the subject of our lecture the soft parts. The pelvis of which we have been long speaking is enbedded in the soft parts. The superior or abdominal pelvis is finished in the anterior part by the abdominal muscles, the fascia and peritoneum, on the posterior part we have the multifidus spinae and sacralumbalis muscles which fill up the notches on the posterior border. On the iliac fossa we have the internal iliac muscle which being broad flat and thin does not encroach upon the diameters of the superior strait. The Psoas magnus does encroach upon the transverse diameter of the superior strait when it is relaxed. The psoas minor should also be studied; the iliac facia, the diaphragm, Poupart's ligament, the crural arch, the abdominal ring. The obturator foramen filled up by the obturator ligament for the origin of the muscle of that name; the blood vessels and nerves, the levator ani muscles, which forms the floor of the trunk of the body, and in fact she should notice all the parts on the inside of the pelvis and the ~~trunk of~~ muscles of the trunk concerned in producing the expulsion of the child. The organs of generation are all those concerned in the production and expulsion of the child. We also speak often of the bladder among these organs. Though it is not strictly an organ of generation yet from its close continuity to those parts it is often included in this general term. First of the arrangement of the internal organs. The bladder is behind the pubes; the rectum lays in the hollow of the sacrum and the womb or uterus is between the two last. These organs are covered by reflections of peritoneum. The uterus has broad ligaments formed by laminae of this membrane going off from it on each side. The externals organs. Above the pubes and in front of their symphysis we have the Mons Veneris, which is formed by an unusual development of adipose matter. The skin over this is condensed fibrous tissue which render the terminations of inflammations in these parts

more difficult than those of any other parts. This tissue as well as the deposition of adeps decreases as we descend upon the labia. The mons after the age of puberty is covered with hairs, which become more and more scarce as we descend, when we get to the perineum there will be rarely found any. The labia externa are situated on each side and appear as if they were the bifurcation of the mons. They meet again at the perineum; the superior meeting of the labia is called the anterior commissure, the posterior, the posterior commissure. The skin as it goes inward becomes more delicate. It is covered with numerous sebacious follicles which sometimes secrete a very irritating fluid, which renders medical assistance necessary. The labia interna or nymphae arise superiorly by two branches which are continuous with the prepuce of the clitoris; they then descend divergingly on the inner face of the labia, and terminate insensibly about middle of the latter opposite the orifice of the vagina. They are of a firm consistence and reddish colour; they are formed of a very delicate tegumentary fold of a mucous character; they are very sensible and are composed of an erectile or spongy tissue very closely resembling that of the corpera cavernosa of men. The clitoris is tubercle often compared to the uvula, and which represents on a small scale the penis of the male. In the clitoris we distinguish a loose extremity, round and of an acorn shape, and a body which is attached by two roots to the ischio-pubic rami; it has not a canal as in the male yard. A fold of skin covers it, serves as a prepuce and proceeds to disappear in the lesser labia of which it seems to be the root.

The vestibulum is a small triangular space circumscribed by the clitoris, the lesser labia and the meatus urinarius. It corresponds to the upper part of the arch of the pubis. In introducing the catheter we may follow the following general directions. Put the end of the finger below the superior commissure, pass it about an inch or half an inch down the median line to the top of the arch of the pubis where we will feel a little tubercle above which we will find the meatus urinarius. There will then

Dr. H. believes that the muscular fibres of the vagina are capable of contracting spasmodically. Detailed the case of a Lady

be no difficulty in passing the catheter. The urethra is separated only from the vagina by this tubercle which projects more or less in different persons and terminates its anterior middle column. — These external parts of generation present a variety. The Bosjesman female's aprons are elongations of the nymphae.

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Lecture VIII Nov 2: 3d

The orifice of the vagina is all that portion just in front of the part embraced within the sphincter vaginae muscle. It has not the power to retain fluids in the vagina and therefore its action is not perfect. — The fourchette is a fold of cuticle and cellular tissue just anterior to the posterior commissure of the labia externa, and extends across it forming behind it the fossa navicularis. The fourchette generally ceases to exist after the first labour of the woman. We must also notice the form and situation and composition of the perineum extending from the anus to the posterior commissure. — That portion of the soft parts behind the anus which is distended during parturition is ~~also~~ called the posterior perineum. The hymen exists in persons who are are not married. It may be crescentic, perforated or cribriform; most commonly crescentic, the horns of the crescent being anterior. ~~When the hymen~~ The carunculae myrtiformes are the remains of the hymen, when that membrane is ruptured. — The vagina is about 4 inches long in persons who have borne children but in unmarried women it is 6 inches. It is composed of two layers. The external seems to be a prolongation of the external laminae of the uterus and has for its base, the yellow cellulo-fibrous tissue; it contains a small number of interlaced, very pale muscular fibres, which must not be compounded with the

in whom it was impossible to take a pessary out of her vagina in consequence of spasm of these fibres; he had to wait until her next menstrual period, when relaxation took place.

Anterior lip of Os External is longest.

Cavity of Uterus 1½ Of neck 1.

elliptical muscular rings which belong to the Sphincter vaginae. The internal layer is continuous with the mucous membrane of the vulva, and is blended with the lining of the uterus by extending itself over the cervix. It has on the anal forwards the prudendum well marked epithelium, follicles, villi &c. Anteriorly and posteriorly this membrane is thrown into folds. The cervix uteri protrudes itself into the vagina above; the posterior portion of the wound is pushed further down than the anterior. The posterior portion of the vagina is in contact with the rectum in its middle. The Uterus is pear shaped. Its cavity is triangular and flat. The cavity of the cervix is oval shaped. The length of the uterus when unimpregnated is about 2½, the neck being 1 inch. Width superiorly 1½ inches, thickness 1 inch. The folds of the peritoneum should also be noticed. The bladder is like that of the male except that the shape length and direction and composition of the urethra. Urethra is surrounded by a spongy erectile tissue called its prostatic portion. ——

Lecture IX Nov 25th. Nov 13th 48-

To-day I continue the account of the Uterus. The structure of the Uterus. The external membrane of a serous character belongs to the peritoneum; behind, it descends lower than the cervix, on to the posterior surface of the vagina, while in front it is reflected upon the bladder after having invested the anterior surface of the uterus, and before it reaches the cervix. Very closely adherent to the upper edge and median line it becomes less so nearer the sides, and in the neighborhood of the broad ligaments may be easily detached. The proper substance of the uterus is muscular. The fibres run in various directions. According to Madame Boivin there

Fallopian from 3 to 4 inches in length

are fibres which appear to originate in the median line at the front back and sides and to turn off towards the Fallopian Tubes and round ligaments &c. The circular fibres of the uterus are situated about the neck and around the upper angles or cornua of the body. I have observed frequently on introducing my hand to deliver the placenta that the circular fibres about one angle may contract so as to make it appear as if the uterus had but one angle. — Two arteries are appropriated to the gestative organs; one known as the uterine arteries furnished by the internal iliac artery penetrate into the substance of the womb at the neck; the others the ovarian, corresponding to the spermatic in the female, given off by the aorta or the emulgents, pass along in the broad ligaments, and after being partly distributed in the ovary proceed to the sides of the body of the womb itself. The ramifying, those of the left side inosculate with those of the right, those from below with those above & as all of them are compressed in the substance of the tissue in which they creep, they are doubled and redoubled a great many times. The veins distributed in the same manner as the arteries, go to the internal iliac vein from one part and to the spermatic veins from the other. During pregnancy these various canals are partially unfolded and largely dilated. Its Lymphatic vessels pass into the pelvic and iliac ganglions. Its nerves come from the sacral plexus, and from the sympathetic nerve by the renal and hypogastric plexus. The former are distributed almost exclusively upon the neck, and it is natural to attribute to them the excessive sensibility enjoyed by this part; whilst the latter being concerned with vegitative life, must be more regularly distributed to all parts of the womb. The pain experienced in the sacral —

regions (called by females the small of the back,) is to be referred to the former of these nerves. — The Fallopian Tubes are two small hollow cylinders about four inches in length which extend from the lateral angles of the womb, extending along the superior margin of the broad ligaments to the iliac fossa terminating in the cavity of the abdomen by a loose and open extremities called fimbriated, or the ostium Dialoli. Its cavity, which at the womb is large enough to admit a middle sized probe, at first contracts by degrees, so that near its middle it bristle can scarcely be passed through, it then enlarges and soon acquires the diameter of two or three lines. Its composition is essentially the same with that of the uterus. At its fimbriated extremity is the only place in which a mucous tissue terminates in a serous. It is supposed that during the venereal excitement they are contracted and that the fimbriated extremity embraces the ovary and enables the semen to pass along the tube to fecundate the ovule. — The ovaries are situated behind and a little below the tubes, near the superior angles of the uterus to which they are attached by the ligaments of the ovary. Oblong slightly flattened from front to rear, being of the size and almost shape of an almond or a large bean the ovaries have a superior convex and loose edge, while their inferior edge is straight, recieves vessels, and proceeds to join the ovarian fringe of the tube. The proper parenchyma is interspersed from the age of puberty to 50 years with from 10 to 20 or 30 transparent vessicles which are denominated ovules or vesicles; called also ovula Graffiani. It is now rendered quite probable from the observations of recent authors that these ovula are composed of a number still smaller, one of which upon the bursting of the ovule —

those either of the preceding and succeeding the round ligaments. The two serous laminæ of the broad ligament are not in immediate contact; they are separated by a layer of cellular tissue, of various thickness, and this layer of cellular tissue, which downwards and outwards becomes blended with the sub-peritoneal cellular tissue or the *facia propria* of the pelvis and iliac fossæ, is pervious to fluids blended with muscular fibres; which shows that they contain nearly the same elements as the uterus. There is but little doubt in my mind but that these ligaments have in them a fibrous or muscular tissue which enables them to contract. They hold the uterus in a nearly perfect anteverted position when the patient is on her back. In other words the direction of the uterus superiorly and inferiorly is nearly that of the axis of the superior strait. — The *round* ligaments, or *sus-pubio-uterals*, fibrous bundles, which take their rise in front of and a little below the Fallopian tubes, follow the outline of the anterior semicircumference of the superior strait of the pelvis, and proceed after passing through the inguinal rings to terminate in the grand labia Veneris, are those which keep the uterus from retroversion. They are evidently of a muscular nature. Without them the uterus would be always retroverted by the bladder, which is repeatedly filled with urine during every twenty four hours. The two anterior or utero-pectineal, very small in most women, proceeding from the sides of the cervix uteri, to the lateral parts of the fundus of the bladder, are occasionally surrounded in all their course to their peritoneal coat, of a few fleshy fibres, that seem to proceed from the anterior inferior transverse layer of the neck of the uterus. The posterior or utero-sacral, which are much stronger and more constantly observed, originate a little lower down, from the posterior surface of the cervix, run backwards, each forming a crescent the concavity of which looks towards the median line are attached to the sides of the sacrum, where they are lost in the cellular tissue and

* Also spoken of as the menses - show - flowers - regular discharge - time - is indisposed - and most commonly alluded to with a nod.

peritoneum, which invests the front of the sacrum. They have in them fleshy fibres which have a tendency to draw the lower part of the uterus towards the sacrum. In order that prolapsus uteri should take place the axis of the vagina must be changed. In other words the upper portion of the uterus must be thrown backwards. ———

Having now finished as far as is deemed important for me to explain, the descriptive of the anatomy of the parts – referring you for the other parts having a bearing upon midwifery I proceed to the physiological points of my subject. — It is unnecessary for me to go into an account of the various changes which take place in the various ages of man's life. I will mention that from birth to 7 years is called infancy, from 7 to 14, childhood, 14 to 21 adolescence, 21 to fifty virility, from 50 upwards old age. About the period of puberty various changes take place both in the woman and man. There is a greater muscular development in the male and a greater deposite of fat & cellular tissue in the female. — (I will not go into detail about these various changes) — There are two important ~~alterations~~ functions appear at this period viz the secretion of the catamenia & the power of being impregnated. I will proceed to the consideration of the first in my next lecture.

Lecture XI Nov 30th. Nov 21, 1840

I wish you to bear in mind that menstruation is only an evidence of puberty and not the cause of puberty. — The technical names are Menstruation and catamenia. Females speak of it as their monthlies, being unwell, the reds, has her troubles, is regular &c. — We will speak 1st of the source of the fluid. It comes from the cavity of the neck and body of the uterus. This is proven by the fact that the uterus is furnished with a peculiar mucous surface. From this it may be inferred that it secretes a peculiar fluid. Females have been dissected who died while they were menstruating, and the blood vessels of the uterus found injected. The fluid has been collected by confining the neck of the uterus in the cupule of a pessary or in a cup. When there is prolapsus it may be seen distilling from the cervix. When the or-

The odour of Menstruation impregnates the Secretions

Red Corpuscles exist in Menstrual fluid

gan is inverted or turned among side out, the fluid may be seen upon the original internal surface. During pregnancy females do not menstruate because the cavity of the uterus is occupied by the ovum. In those cases, which have been reported of menstruation during pregnancy, the flow takes place in the first 3 or 4 months and in small quantity. Never does it occur in the last months or after the ovum is large enough to occupy both the body and neck of the uterus. The fluid in these cases is evidently produced in the cervix. – We further say that it comes from the capillary vessels of the internal membrane. It does not come from any glandular structure or sinuses, which some suppose to exist. Of this we only have negative evidence; as no one has been able to show any anatomical facts to prove it. – Physiologists have not agreed as to the quality of this fluid, some contending that it is blood, others that it is peculiar. I think that it is excretory and peculiar. The colour is peculiar, being not so bright as arterial nor so dark as venous blood. It has a mawkishness which is peculiar – and has an oleaginous feel not like that of blood. The odour is peculiar. A female who is menstruating may often be smelt for some distance. This odour is also often found in the excretions. The catamenia does not putrify. – Never coagulates in healthy females. The clots which have been found in the vagina and other parts of the woman in the neighborhood of the vulva can be satisfactorily accounted for. Those cases in which they are found are unifromly accompanied with more or less hemorrhage from the parts and the blood is intimately mixed with the catamenia so that we have a mixed fluid a part of which is capable of being coagulated. This state of things is apt to occur in profuse menstruation and dysmenorrhoea, but never when the menses are in proper quantity & come properly. There may be also hemorrhage from the vagina or from the parts about the vulva, at the time of the discharge and then a clot may be formed and mistaken for the proper menstrual fluid. – The coagulation of this fluid would subject the female to numerous inconveniences. If the hymen should be but slightly perforated, the fluid would coagulate and stop up the small orifice and prevent its further flow. The same consequence would follow any obstruction to the flow of the menses out of the womb immediately after it exudes from the membrane. Even if the

Dr Hodge says that Poisons will not prevent Coagulation
Dr Jackson says that it will -

Influence of Climate has not as much influence as formerly - supposed but it has some -

If Menstruation occurs early Constitution not so good -

Woman who labour do not menstruate as early as one who leads an indolent life.

Going to Theatre Reading Novels &c - influences the period of occurrence of Menstruation

Nervous girl menstruate earlier - than Robust -

Without a development of the organs Menstruation cannot occur.

uterus. This fluid does not coagulate when collected and put in a bottle. — It has been contended that it does not coagulate because it is mixed with mucus. But this is disproven by mixing blood with mucus from any part of the body. Again blood mixed with the catamenial fluid will coagulate. — This fluid is not an effusion but a secretion. This is proven by the analogies of other parts of the body. There is no part of the system in which the effusion of blood takes place when in health the nature of uterus itself is further proof. — The time of the appearance of the menses in our temperate climates is from 13 to 15 years of age, in southern climates from 8 to 12, and a little later from 15 to 20 years in our more northern latitudes; Temperature affect the time at which it appears. Thus women on the north side and top of mountains menstruate [illegible] than those living on the south side and at their base. This has also an effect upon gestation those women who menstruate early are more liable to abortion and those who menstruate late as in northern latitudes are able to carry their children to the full term and produce a hardy race. Mode of living has an effect upon the early or late arrival of puberty. Women in the country do not menstruate as early as those living in cities. The period of puberty does not depend upon the physical development. But is dependent upon the nervous system. The imagination associations &c hasten it. Those women who are of a lymphatic-sanguine temperament, very fat, and whose sensibilities are not very acute, do not menstruate as early as those who are thin, delicate, nervous, irritable and sanguine. The nervous sanguine temperament is the most precocious in this respect. In those cases which may be presented to you where there is said to be a premature menstruation you should examine very cautiously whether there be not an effusion of blood from the organs, instead of the genuine fluid. — Preceded by a sensation of lassitude, of uneasiness in the limbs, of weight in the loins of heat, of tension in the epigastrium and pressure, by a slight pruritus of the sexual parts by a mucus discharge that is clear and

Duration of Menstruation is influenced by all those causes which operate upon the time of its commencement.

* That is the menstrual periods in general. Not the period of puberty only.

Hookers menstruates copiously—

General plethora is not the cause

~~Local plethora~~.

It is caused by a peculiar irritation. Why this is so we dont know.

It is necessary that the lining membrane of the uterus should be in a healthy condition

yellow and more or less abundant, it happens also that the first eruption of the menses in many women is effected without its being announced by any precursory symptoms, & it is in the latter case rarely abundant. There is seldom any fever, but slight flushes of heat often occur being the result of nervous and not arterial excitement. In general they do not become regular until after 3 or 4 periods. It is at this time that we are apt to meet with those diseases called hysterical. The duration of the discharge varies according to the same circumstances mentioned as varying the arrival of puberty. The duration is from a few hours to a week. In temperate climates from 4 to 7 days and in this city about 6 days is the usual duration of the discharge. The quantity also varies according to the same circumstances. In temperate climates it amounts to about ℥ 4 ; in warm climates it may amount to from ℥ 16 to ℥ 18 or even ℥ 20 ; women in northern climates menstruate very slightly. Corpulent women menstruate slightly ; delicate and nervous ones to a large amount. The state of the mind has an effect upon the quantity also. The menses appear periodically. A lunar month or 28 days intervene between the commencement of each menstrual period. As they are about one week menstruating they may be said to be well 3 weeks. The time which intervenes between the commencement and cessation of the menses is about 30 years. If a woman menstruate early she will cease to do so early. Commencing at 15 she will cease at 45. Commencing later she will cease proportionally later. They ought to disappear gradually. Leucorrhoeal discharges are often substituted. Bodily changes take place also at this period. The losses that fat, roundness, plumpness which she acquired at puberty, & delicate and sodden hue is exchanged for the crumpled cheek &c &c. They do not cease at once ; the cessation should be gradual. The discharges sometimes gradually assume a mucous or leucorrhoeal appearance. Lassitude, a sense of suffocation, nervousness

plaints, even severe disease, will sometimes occur at this period), ~~It tendency~~ tendency to malignant disease is known at this period. Where a disease which before was under the control of Medicine may assume a dangerous form or some very violent symptoms may supervene. In other the cessation takes place without any inconvenience and the woman's health is improved. — When called to a patient just about arriving at puberty we have only to ask "Has a change occured?" in order to ascertain whether there has been menstruation. The same question will suffice to ascertain whether the patient has ceased to menstruate. It is perfectly understood by the women. More about this in the next lecture.

Lecture XII December 2nd Nov 28, 1850

In married females the flow of the menses is subject to interruptions. As a general rule they do not menstruate; the exceptions to this occur only during the first months of pregnancy, when the ovum does not occupy the cavity of the neck of the uterus. They do not menstruate during lactation. There are some exceptions. The rule is explained on the ground that the irritation is transferred to the mammae, and thus accounting for the not unfrequent occurrence of an increased flow of milk during the regular menstrual period. — Why do females menstruate? This question has been attempted to be answered by attributing it to the influence of the moon. But this is untrue since women are menstruating at every period of the moon. It has also been attributed to plethora. Yet this cannot be as menstruation will not stop if we open a vein or other blood vessel. The most plethoric women do not menstruate the most profusely, on the contrary it nervous women in whom this function is the most abundantly carried on, especially if that temperament be combined with the sanguine. I think that there is a local plethora, dependent upon a peculiar irritation. Where that irritation is seated we do not know. Pace & Spurzheim placed it in the cerebellum. Although it is not an established point, it is well worthy of your attention. All we can say is, that it is a law of the economy and must be properly performed. That this may be

Vesicles of Ovaries are continually forming —

Music will sometimes cause Menstruation —

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Lec 3. 1878

the case the uterus must be healthy. The irritation does not depend upon the uterus alone, but the ovaries must be healthy. If the ovaries be diseased or wanting the menstruation will either not be performed or if performed it is irregular. A woman never menstruates who is deprived of both of her ovaries. — The periodicity cannot be accounted for. Females are very regular when healthy. Freight, music, and various mental emotions may cause a female to menstruate. This shows that there is an intimate connection between this secretion and the nervous system. — The cause of the cessation has not been explained. It is a law of nature and seems to be a good one. For besides preventing the production of a puny and delicate offspring, the woman herself becomes stronger & is more able to bear fatigue than would be the case if she menstruated at an advanced age. I wish you to bear in mind the changes which take place at this time. — I think there is a disposition to inward plethora. By this I mean a disposition in the blood to remain in the large vessels and not to circulate freely in the capillaries. The pulse is full slow and often tense, being what is denominated the apoplectic pulse. I think it probable that the cessation of the discharge may produce it. There is at this time a diminution of the other secretions. The nervous affections at this time are not strictly speaking hysterical. They are such as colic, gastrodynia, the different forms of angina pectoris, apoplexy, &c depending upon this peculiar plethoric condition of the system. — Of the uses of the menses we know nothing — The menses are indicative of a susceptibility to conception. Women do not conceive before they have menstruated. It is probable that the menses are just appearing when conception took place in those cases which are mentioned as exceptions to this rule. — Females irregular as to the time and quantity of this secretion do not conceive. — Conception generally takes place about a week after menstruation. Those women who have ceased to menstruate do not conceive. — The management of menstruating females is very important. Women have a greater influence over the constitution of the child than its father. When predisposed to disease they should not marry. In infancy females should be subjected to a nutritious diet and allowed free air. The mothers milk is better for the infant than any other food. — In Childhood we should attend to their

"Women are most liable to become impregnated immediately after Menstruation

physical development & give tone & vigor to their tissues. Giving tone and vigor to the constitution overcomes that irritability of the nervous system which hastens the arrival of puberty and is the source of many menstrual irregularities. No part of the body should be confined so as to arrest its development by corsets, or tight clothing of any kind. We should attend to the posture and positions of the body. The manner in which girls and boys are often confined in Manufactories and schools is very reprehensible. — Hence are often seen cases of curved spine and cases too in which the spine is twisted in every variety of shape & direction. These deformities are not confined to any particular part of the body. They may not only be the consequence of disease produced by posture, but also may be the mere effect of postures, the body being developed in a particular position. — Exercise, (Gymnastic exercise) running, labour, are of great importance to the full development of the body, and for giving tone and vigor to it. Precocity of intellect retards the growth of the body. Nothing is gained by permitting precocity, even in the development of the mind. Though the intellect may be sprightly, there will not be that strength and vigor so necessary to a well disciplined mind without a corresponding corporeal development. — Regulation of the circulation will produce vigor of constitution. This can be done in a great measure by exercise; the blood under these circumstances being caused to flow more freely in the capillaries. The cities, where we cannot afford the same opportunity for this purpose as in the country, boys should practice gymnastics and the girls calisthenics. They should not be allowed rich and stimulating food. Young persons should be allowed nutritious vegetable food but little animal food. It should be simple and not in too great a quantity. They should masticate well. The circulation of the skin should be attended to; also their secretions. They should not neglect to attend to their excretions, which females are very apt to do. They should be warmly clad, should not be allowed to expose their neck & chest, — should go to bed early and rise early, should have their feet well provided for with proper shoes. Their mouths should be carefully watched over. — We are often called upon to attend females about the time of

No stimuli should be administered during Menstruation

Keep the surface of the Body warm.

What which produces perspiration assist Menstrual flow.

puberty, and we should weigh their case carefully. Should there be a disposition to plethora, we should use some of the commonest antiphlogistic remedies, as hydragogue cathartics, laxatives vegetable diet & even sometimes the lancet. If disposition to hysterical affections we should use antispasmodics, as asafoetida, Hoffman's anodyne, Spts Nitre Dulcis, ether, musk &c. But they are more apt to be anemic. Here we should give tone and vigor by proper diet, tonics, exercise &c. When she does not menstruate you should not give emmenagogues — If insisted upon that some medicine should be given, a domestic, placebos. Give tonics — the minerals are rather better than the vegetable tonics. Iodyl is the best of all. Sometimes we may give mild stimulating drinks as infusion of catnep (Nepeta cataria) mint tea or other teas of this kind.

Lecture XIII December 5th.

We will consider the subject of the treatment of menstruating females a little further. Let the mind and body be kept at rest during the menstrual period. Avoid all exciting subjects. Warm pediluvia are very useful in exciting the capillary circulation; and through this portion of the circulation the secretions are increased. The menses being a secretion they are also increased. Moist heat excites the capillaries and not dry heat.

We proceed now to the treatment of females who have cease to menstruate. I said that there is in these cases no "plethora". Powerful means should not be resorted to for this purpose. The recuperative energies of the system are not so powerful. The system will not bear much depletion to a great extent. It will not do to restrict them to an exclusively vegetable diet; animal food of the most digestible and lightest kind should be allowed. We say then that the diet should be nutritious vegetable and animal diet. — Exercise and tepid baths to excite the capillaries should be prescribed. — It seems paradoxical to use antiphlogistic means and tonics at the same time; but I have no doubt but that it is the only true way of treating these cases. You will find it difficult to put this principle into practice, yet by using caution you will be able to accomplish it. — The indications are to give strength and allay nervous irritability. As said before you should use bleeding cautiously, so in acid-

Amenorhoea

2 Varieties one in which never Menstruated Emansio Mensium other where they have appeared but disappeared. Suppression of Menstruation

1st Emansio Mensium. Sometimes organs are wanting Told us of an instance where Uterus was wanting. In some instances when puberty arrives health bad. bad development, ~~or bad dress~~

2nd Menstruation is caused by bad health. Sometimes this is owing to hereditary predespositions

It is most probably caused by improper digestion

Difference between Active & Passive Congestion - In former determination of Blood to an organ
In latter there is a ~~de~~ stagnation of Blood in organ.

Vicarious Menstruation may take place from any of organs -

Rheumatic patients Gout &c are liable to suppression of Menses
Diseases of Uterus

ministering anodynes we should be cautious not to push them too far, for fear of producing congestion of the brain. Opium is the most powerful of these medicines, also that which has the greatest tendency to the brain and should not be prescribed without previous depletions in many cases. There being a great disposition to increase of local diseases at this period we will often be compelled to use local antiphlogistic remedies while we are giving tonics and allowing a generous diet to support the system at large. That this can be done, although it is paradoxical in principle, I have no doubt.

We will now consider the function of reproduction or generation. Reproduction may also be applied to the process of nutrition yet as here used it is synonymous with generation, This function is possessed by organized bodies exclusively. Writers of antiquity contended that there were two ways in which these bodies are produced; viz either by a process in which they ceased regular generation as is the case in the higher animals or, equivocal or spontaneous generation.

Modern Physiologists have given up the latter theory and the old aphorism "omne vivum ab ovo;" is almost universally acknowledged. The simplest kind of generation is where a animal separates into several pieces forming so many distinct living beings. This is fissiparous generation or generation by spontaneous division. A somewhat more elevated kind of reproduction is the gemmiparous - common in the vegetable Kingdom, - which consists in the formation of buds spondes or germs over some part of the body. These at a certain period drop off and according as it is developed on the surface of the body or internally it is said to be external or internal gemmiparous generation. In these two varieties, the whole function is performed by a single individual.

Higher up the scale, we find special organs for the accomplishment of generation - male & female. Animals of this class which have both sexes of the reproductive organs

Dysmenorrhoea frequently caused by Inflamation of Uterus -

Anything which exercises a powerful influence upon general system & particular uterus may cause suppression of Menses -

Difficult sometimes to distinguish ~~Amenorrhoea~~ Dysmenorrhoea & Abortion

Dysmenorrhoea

It is an inordinate nervous excitement stopping short of Inflamation

in the same individual are called hermaphrodite or androgynous. This is the case with almost all the plants and with some of the lower orders of animals. Some of these are capable of reproduction without the concourse of a second individual; others although possessing both attributes, require the concourse of another; the male parts of one corresponding to the female parts of the other. Both in this way are impregnated. The Glaris hortensis an example of this. Again in the higher animals each sexual characteristic is possessed by a separate individual; the concourse of the male and female or the matters proceeding from them [illegible] necessary for reproduction. — Here again there are two great differences. Sometimes the fecundating fluid of the male is not applied to the ovum of the female until after its ejection from the latter, as in fishes. In other cases the ovum cannot be fecundated after its ejection and the fluid of the male is applied to it while still in the female, as in birds and mammalia. Again where there is copulation varieties exist. First, the ovum when once fecundated, may be immediately laid by the female & hatched out of the body constituting oviparous generation. Secondly. Although the process of laying commences immediately after fecundation, yet it is paused so slowly during the excretory passages, that the it is sometimes hatched there. This constitutes ovo-viviparous generation of which the viper & salamander are examples. Thirdly. The fecundated ovum may be detached from the ovary soon after fecundation & instead of being ejected is lodged in a roomy or uterus where it [illegible] in order to be developed at the expense of the mother, & finally is born with its appropriate form; this is vivi-parous generation. Lastly some animals have a pouch as the Kangaroo, opossum the marsupial &.

which recieve the young in an early stage of development & is furnished with little glands which secrete milk, on which they are nourished. — The contact of the semen masculinum & the ovule of the female is indispensible to fecundation. This is proven by the experiments of Blundell, who found that when communication between the vagina and the uterus is cut off fecundation did not take place in rabbits; ~~Spallanzani~~ There cannot be a semen or habitus which by itself rising from the semen fecundates. This is proven by the experiments of Spallanzani.

There are two theories of generation viz Epigenesis & Evolution. Epigenesis is the most ancient of all the hypotheses; according to it the new being is conceived to be built up of materials furnished by both sexes, the particles composing these materials having previously possessed the arrangement necessary for constituting it, or having suddenly recieved such arrangement. — According to the theory of evolution the new being preexists in some shape in one of the sexes, but requires to be vivified by the other in the act of generation. After which it commences a series of developments or Evolutions, which lead to the formation of the new being. There are two theories of evolution the ovular & the animalcular or spermacular. — The best theory of that of Epigenesis or where the animal is formed by particles furnished by both sexes. The contact of these particles must take place in the ovary. This is proven by the experiments which were instituted by Heighton of cutting the Fallopian tubes & preventing the passage along them. Also proven by the extra uterine gestations. &c &c,

Lecture XIV Dec. 7th '42

We will to-day consider the subject of gestation or pregnancy. Authors generally speak of two kinds, viz, regular and irregular; uterine and extra uterine, normal & abnormal. The former is physiological, the latter pathological. The first is when the ovum enters the uterus and is there regularly developed; the second

Treatment of Amenorrhoea

In choosing cathartics choose those which has an action upon Uterus Most of the Emenagogues pills contain Aloes & Iron

when the ovum is developed out of the womb as in the Fallopian tubes & in the abdomen — This latter is very dangerous and very seriously involves the life of the female. — In considering this part of our subject we will 1st take up the changes which take place in the uterus and its appendages, 2nd ly the changes undergone by the Ovum, 3dly the changes consequent upon the ~~first~~ two. —— 1st. During coition there seems to be a general erection of the parts from the injection of the blood vessels. The Fallopian tubes, we have reason to believe is in a state of erection, the fimbriated extremity is brought by this to embrace the ovule. This erectement continues sometimes two or three days after coition. — The parietes of the uterus become thicker, yet they are less dense. The cavity enlarges. It is larger, in the early stages, in proportion to the size of the ovum than it is in the last months of pregnancy. Instead of remaining flattened as in its two surfaces, the womb becomes rounded & soon grows of a fusiform shape. The vaginal angle becomes more acute; its orifice sometimes becomes circular, or ceases to represent a simple linear or transverse slit, particularly in first pregnancies; on other occasions it is pretty largely open, its lips become thicker & softer, chiefly in those women who have borne children. In some instances of first pregnancy, it seems to close completely up, so that it can scarcely be distinguished by the finger. The cervix at the second month is almost two inches in length. It is depressed and approaches near the vulva; this phenomenon is observable in women who have a large pelvis & a soft rigid & relaxation of fibre in a greater degree than in women in the opposite condition. At the third month the womb is nearly two inches and a half through in every direction, the fundus is about upon a level with the superior strait, and the os, tincæ rises to near its former level. In the fourth month the uterus begins to ascend from the pelvis. It is about three and a half inches through at this time and the parts near the inner orifice are unfolded, and extend side in long, very delicate ridges. The fundus rises two finger breadths above the plane of the superior strait. It is at this time that quickening takes place. In the fifth month the fundus rises as high as

Dysmenorrhoea.

sometimes an actual Obstruction
others very painful but no obstruction
It sometimes arises from Mechanical Obstruction
those which depend upon Physiological or pathological causes

Pains of dysmenorrhoea is nearly equal to those of parturition

Pain is generally at the commencement of the disease

Pain arises from the fact that pure blood is poured forth and is not composed of pure Menstrual fluid
When this blood is poured forth Coagula is formed in the uterus and it has to be gotten rid of by a kind of parturient effort

Blood vessels of Uterus are engorged during pain & excitement

Uterus may be in some instances in an actual state of Inflamation but not as in ordinary cases-

Irritable uterus is a Sciderma of Uterus an is a predisposing cause of Dysmenorrhoea

as this spirits half way between the umbilicus & the pubes. At the sixth month it is about on a level with the umbilicus. Dr Hewes said that it is half way between the umbilicus & pubes at this time. In the 7th month it rises two fingers bread above the umbilicus. In the 8th month it presses against the lower margins of the ribs. During the 9th month it does not rise much higher. In the latter months the womb seems burthened as it were with the weight of the ovum, and consequently sinks sometimes or is somewhat crushed downwards, which compells it to enlarge proportionably in the transverse and in the antero-posterior diameters, which until this time it does not appear to do. In young females the womb does not incline forwards so much as in those who have borne children. Because the abdominal muscles are not so much relaxed in the former as in the latter. — The cervix enlarges also by a development of its tissues. During the 1st & 2nd months it is about two inches in length. After the 3d and at the end of the 4th its cavity spreads out so as to form a portion of the general cavity of the uterus. At the 6th it is half gone, at the 7th about two thirds disappear. In the 8th it may be said to disappear entirely. These changes do not occur with perfect uniformity. I have known the neck to retain its shape even to the last months of pregnancy & to disappear much earlier than above stated. But these only form exceptions to a general rule. — After the changes of form already stated, the womb gradually assumes the form of an oval, with its point downwards. Its posterior wall, which was, even before impregnation, more protuberant than its anterior one, grows so disproportionately that the tubes seem to descend considerably, until their roots appear to answer to the point of union of the posterior two thirds, and anterior third of the uterine circumference. Its fundus also enlarges very much. Of dimensions nearly equal in every direction, about the fifth or sixth month the organ of gestation exhibits the figure of a spheroidal vase terminated by a very short neck; it might be compared to a hog's bladder,

Displacement of Uterus causes irritability this causes congestion & congestion causes Dysmenorrhoea

Irritable or plethoric condition of Uterus anything which violently excites passions
Cold one of most common cause

with the urethral extremity served round with thread for the space of an inch or two, supposing that some one should now unwind the threads by degrees from above downwards, while another blows into the bladder from the fundus so as to distend it, we can acquire a pretty clear idea of the gradual effacement of the apex of the womb. — It is now known that the womb preserves nearly the same thickness during the whole course of pregnancy as it had when unimpregnated; (sometimes it is a line or two thicker or thinner;) that this thickness, always greatest at the insertion of the placenta, generally diminishes from the fundus towards the cervix, where it is frequently found to be not more than two or three lines, or even less; that it increases a little in all parts of the organ at the same time, until the third or fourth month, and then remains rather below its primitive limits, except the cervix, which at this period especially grows thinner, to exceed them again in the last stages of pregnancy. The peritoneum covers the womb during the whole period, so that we cannot expect to cut into the uterus without injuring it. The fibres which were before pregnancy paleadense, inextricably tangled, soften, become reddish, and soon represent layers and bundles easy to detect and to follow. The cellular tissue before so fine, loose and elastic, relaxes, becomes supple, and permits the other elements which it held in bondage as it were to follow the impulse that animates the whole womb. The arteries before folded upon each other like the vas deferens, are gradually unfolded and become lengthened and double, triple & even quadruple their diameters before fecundation. The veins undergo the same changes, even proportionately greater than the arteries. In some instances they are large enough to admit a crow quill and even the little finger. Near the mucous membrane they dilate so as to constitute the cones with inverted bases which have been called uterine sinuses, or venous sinuses. The lymphatic vessels are very much ampli-

fied. The mucous membrane becomes more demonstrable, redder, more villous & can be detached in small shreds. — The physiological condition of the womb is also heightened. Its sensibility & irritability are increased. — The uterus does not enlarge from the mechanical pressure of the delicate ovum; but as the ovum is developed the uterus accommodates itself to its size. Just as the cranium is enlarged to accommodate the increased size of the brain; which all know does not take place from the mechanical pressure of the soft substance of the brain against the unyielding texture of the cranium.

Lecture XV Dec 9th

Changes take place also in the appendages of the uterus. In consequence of the depression of the cervix during the first months the vagina becomes shorter and wider; at a later period being drawn upwards with the uterus, it becomes elongated, and at length forms a cone with its apex at the vulva. By means of the development of its vessels & other tissues it becomes softened, and during parturition it is capable of great distention. The bladder rises above the superior strait; the urethra retreats under the arch of the pubis and its orifice being somewhat behind, the introduction of the catheter in pregnant women is often attended with great difficulty. It may also happen that the bladder being pressed upwardly by the uterus from above, may project against the upper side of the vagina, making a tumour there called Hernia of the bladder. — The Fallopian tubes, retained by the broad ligaments against the sides of the uterus, enlarge become redder, more vascular, and as it were spongy on the inner surface of the is spongy portion. The state of erection spoken of before does not continue. The ovaries, which are depressed in the same way, also increase in size; their vessels dilate, sometimes become varicose, so as even to burst occasioning sometimes fatal hemorrhage. The fibres of the round ligaments also undergo development also. Velpeau says that during labour he has felt them vascular. — The rectum is disturbed by pressure very much in the

first month. But during the last, from its not receiving any assistance in the expulsion of the fæces from the diaphragm and abdominal Muscles it is not able entirely to expell them and they accumulate, the rectum pushing against the posterior wall of the vagina. The small intestines and the colon, (except the ascend & the sigmoid flexure, which appear at the sides and a little anterior to the lower part of the wound,) are kept behind this latter organ. All the viscera of the abdomen are pressed upon & thrown them those of the chest are compressed and their movements disturbed. One of the earliest signs of pregnancy is the waist becoming enlarged from this cause & following it the female discovers that her dresses are too small. The skin and fascia are also very much stretched, In some places the parietes become very thin & hence the liability of pregnant females to ventral hernia. The umbilicus is stretched so that from being somewhat elevated it is out on a level with the surrounding plane of the skin. By during the first months it [illegible] we may have reason to suspect the existence of umbilical hernia, but if this takes place after the sixth month we may conclude with certainty that there is no hernia, for at that time the wound has passed that point & prevents the intestine from being near it, owing to the stretching of the skin an appearance of cicatrices is produced after confinement. This is not merely the effect of the stretching, Skin puts on this appearance after it has been subjected to this process in any other way than the present. The blood vessels are also affected. The arteries less than the veins. These latter may become varicose in the legs or other parts below any point pressed by the uterus. — Anasarca also ensues in many cases. The legs scrotum and Mons pubis &c are liable to this affection. The nerves are pressed upon, and sometimes produce paraplegia. The intestines are sometimes so tightly pressed that [illegible] observe these symptoms of colic. — Abortion & premature labor. The uterus at the full period is about a foot in length the

its antero-posterior diameter being eight and a half and the transverse being about 9 inches. The woman in order to sustain herself is compelled during pregnancy to lean back & thereby causes the back to become very hollow. Sometimes from positive there are severe pains in the back. —— We come now to the consideration of the second part of the subject as mentioned in the last lecture, viz The changes which take place in the ovum. In connection with this I must mention a change which takes place in the uterus after fecundation. The lining membrane of the womb throws out a fluid which I think is Cytoplasm. This becomes organized, increases in thickness lines the whole cavity & closes the orifices of the Fallopian tubes & the internal orifice of the womb. The internal surface of it is smooth. It continues to the full period. It is called the membrana caduca or decidua. The ovum as it enters the uterus is pushed into it, or the membrane is reflected over the ovum, so that we have after the ovum enters the womb, the external or uterine & the internal or reflected caduca or decidua. This membrane is proved to be organised by the facts that it has been injected that it grows, that it changes its character, it becomes thinner, and towards the last of pregnancy becomes very like cellular membrane, it is subject to diseased action. Important changes occur in this during the development of the ovum. The Graffian vesicle contains an ovule which is invested with its membranes which upon fecundation is taken up into the uterus by the Fallopian tubes. The external membrane of the ovum is the chorion, which is a delicate serous membrane. Externally it is smooth and velvety, the external is covered with a number of spongioles. From it the placenta is formed. The relative appearance of the two membranes of the ovum may be represented thus The external of these is seen here The internal of these membranes is the amnion. There is a cavity between the two. They are both organized. The amnion contains a fluid called liquor amnii. It is a peculiar fluid. Seems to be for the purpose of affording a pliable or soft bed in which the foetus may be developed and float unencumbered. It facilitates the dilatation of the os uteri during pregnancy & subserves various obstetric purposes. It is according to some authors of a nauseous, insipid smell, somewhat

like that of semen, sometimes, a little more consistent than pure water, of a greenish colour. It is proven that it is not the product of the fetus by the fact that it is proportionately greater in the first than in the last months as regards the child.

Lecture XVI Dec 12th

The chick, as we see properly the embryo in the first months of pregnancy may be outside of the decidua and appear to float in the liquor amnii this is owing to the fact that the membranes are reflected over it, & the amniotic liquor measures about one half a pint at the full period; sometimes it is as much as pints & even gallons. The chorion maintains its spherical shape. Between it and the amnion, in the cavity before spoken of, is a fluid or tissue which is considered analogous to the white of the egg of a chicken. It nourishes the embryo during the early months. This is called the reticulated tissue by Wolpeau. The decidua reflexa is in it. This reflexa is connected to the embryo by a stem accompanied by the omphalo-mesenteric & the vitello mesenteric or simply the umbilical vesicle vessels. This canal & the outer of the chorion & is connected, as some think with the ileum, by others to the cæcum by the appendix vermiformis. Indeed some think that this latter is the remains of the former.

The time when the ovum enters the uterus is a matters of some doubt. Some say it is as much as three weeks after foundation. But I think we may say that it is about one week. It does not fall into the uterus, but at the uterine end of the fallopian tube it meets with the decidua, & pushes it to (inwards), a portion of the latter being reflected over the former; this reflected portion is the decidua reflexa = the remaining portion is the decidua vera or uterine decidua. — The ovum continues to grow until it may be said to be covered by the decidua. The placenta is formed out of the spongy part of the

chorion. It has two parts a maternal & fetal. They are not connected by blood vessels. The arteries and vessels of the uterus open on the internal surface by open mouths & the placenta acts as a valve to them; when it is withdrawn, there will be hemorrhage unless the uterus contracts so as to close the mouths of the vessels. The fetal side of the placenta is covered by the chorion, & the amnion is in contact with the latter. On the maternal side of it, it is covered by the decidua. — The retained fetal body remains between the chorion & amnion though must spread out to, until the full period of utero-gestation. In separating the membranes with the finger, we can feel the tearing of the decidua, the chorion and the amnion distinctly. The decidua becomes more & more like cellular tissue. The decidua reflexa & decidua uteromana, can be separated from each other generally till the 3d month.

Lecture XVII Dec 14th

The vessels of the umbilical cord, do not communicate with the uterus. The veins may be injected through the arteries & vice versa. Both the cord & placenta are dependent upon the mother and not on the fetus for life. The proofs of this are that the part attached to the child after it is cut slaughs. & that the placenta may be considerably increased after the death of the child in the womb or after its delivery. — The feel of the placenta is peculiar, & should be studied. — The cord at the earliest periods of gestation is hardly perceptible. In about 3 weeks it is about ¼ an inch in length & continues to increase to the full period, when it becomes of a length equal to that of the child; generally 18 or 20 inches. It is covered by the amnion & the chorion; the former being on the outside. In the interstices of the cord there is an albuminous matter which is more or less developed in different specimens giving rise to the division into fat and lean cords. The arteries carry venous blood & the veins blood which has undergone some change in the placenta. The arteries emerge out of the fetus at the umbilicus. They proceed from the umbilicus to the internal iliac arteries of the fetus. The vein having reached the under surface of the liver in the transverse fissure, divides into two branches, one of which then

ductus venosus opens into the vena cava just below the diaphragm, while the other which constitutes the right branch of the vena portae distributes in the liver & anastomoses with the radicles of the hepatic veins. It has no valves. When the cord is too long it may become tangled around the fetus or even knotted. When too short it interferes with delivery &c. — In cases of twins, each fetus has its own membranes; when they enter the uterus from the same tube there will be no decidua interposed between them. The membranes interposed will be, amnion, chorion, chorion amnion. When they enter from different tubes there will be, amnion, chorion, decidua, decidua, chorion, amnion. The blood vessels of one child rarely communicates with those of the other. The placentas are usually united, though they are often separate. — According to the physiological views already expressed superfectation is impossible after the decidua has been formed. The bearing at one pregnancy of a black and a white child, by a woman or a mule and a horse by a mare, is explained by supposing that connection with the two fathers must have taken place before the formation of the decidua. When two children are delivered at different times, we say that there was unequal development. — The embryo is perceptible with a microscope about the tenth day; prior to that time a minute point is perceptible. — The embryo consists of two vesicles but upon themselves having the appearance of a worm. The internal organs are developed first, and this commences in the convex part of it. The spinal marrow is the first to be developed. The external organs are in my opinion developed by pulsations. At 3 months the embryo becomes complete & it is then called foetus. From this it continues to grow. At the eighth months the foetus is more viable than at the 7th. The popular notion on this subject is a mistaken one. — The length of the long diameter of the foetus ellipse is about 12 inches, that of the short diameter being from 6 to 8. The organs are formed on the convex portion of the embryo.

Lecture XVIII. Dec 16th.

We come now to speak of the internal structure of the foetus. The encephalon is very distinct at the end of the 3d month. — The viscera of the chest are analogous to those of the adult. — The lungs are more

compact and solid than the adult's. They are white, with black or dark spots on them. After respiration they become fluid. Before respiration the lungs will sink in water, after this takes place they will swim. This though stated as a general remark is not an infallible rule. There may be an accumulation of gasses in them and as the difference in specific gravity is compensated for by the introduction of a small amount of gaseous materials; it should be very well impressed on your minds, since the life of an individual may be involved in the mere expression of your opinion upon this subject. — There is situated in the upper part of the thorax already called thymus gland. It fills the upper part of the anterior mediastinum, ascending as high as the thyroid body, & descending in front of the pericardium, and of the great vessels as low down as the diaphragm; it consists of two lobes of an oval figure, close in the centre but separated at either end. There are sometimes three lobes. It is larger upon the right side. Various conjectures have been made as to its use. I think the best one is that it fills up a space which would be otherwise unoccupied on account of the collapsed state of the lungs.

The heart originally seems to be two vesicles, one for the auricles & one for the ventricles. A partition is formed in each. The partition in the auricular portion is perforated. This is called foramen ovale. There is a valve over this foramen in the left auricle which permits the blood to flow in from the right auricle but prevents its return by the same route. — Before the division of the heart the aorta was common to the pulmonary, when the division takes place it divides also into aorta & pulmonary artery. — The ductus arteriosus seems to be a continuation of the main trunk of the pulmonary artery beyond where it sends off small branches to the lungs. It empties into the aorta just behind the origin of the left subclavian vein. The Eustachian valve is so placed as to direct the current from the orifice of the ascending cava in to the foramen ovale. — The viscera of the abdomen

are perfectly formed; the liver is larger in proportion to the size of the body than it is in the adult. There are also some little bodies on the kidneys called capsulae renales. — The testicles is formed in the abdomen just below the kidneys and about the 7th or 8th month descends into the scrotum. — The umbilical vein enters the left branch of the vena portarum, just beyond this junction & indeed it may be considered as the continuation of the vein & not a branch is the ductus venosum which enters the left hepatic vein near its entrance into the ascending cava (Prof. Hodge here detailed the peculiarities of the foetal circulation — which coincided with the accounts given in books on anatomy).

It is probable that the foetus forms its own blood just as the chick has its own blood. This is proven from analogy & from the fact that the red blood is always found in the centre of the ovum & by its perfectly independent existence in the earliest days of the vivification of the germ. — Besides the blood differs in colour in coagulability, & chemical composition from that of the mother. The mother's blood is not adapted to such a delicate being as the ovum. Hemorrhages from the mother do not necessarily affect the child & vice versa. Pressure on the umbilicus will produce death of the child, showing that there is a kind of respiration of the foetus through this cord.

Lecture XIX. Dec. 19th.

The aeration of the child's blood does not, as many have said, appear to be produced by a species of breathing in the liquor amnii, in a manner analogous to fishes. There is no structure like gills in the foetus — and no water is ever found in the lungs to permit us to suppose that this change takes place there. It is further disproven by the fact that a child may live 2 or 3 days after the rupture

of the membranes. Therefore we say that the change takes place in the placenta. — Nutrition of the foetus. The embryo has been supposed to have been nourished by the umbilical vesicle, just as the chick is nourished by the vitellus. But this is disproven in a great degree by the vesicle being so disproportionally small. It seems probable that there is some means of imparting nourishment from the mother. The foetus is supplied by the cord in all probability. There cannot be nourishment afforded by the amniotic liquor, because acephalous monsters have been carried to the full period & could not have been nourished by the mouth, & the possibility of cutaneous absorption is not supposable, as the whole body is covered by an oleaginous viscid, peculiar fluid, which would prevent it. The best hypothesis upon this subject is that there is an absorption from the mother through the placenta. But this is opposed by the facts that in some of the lower orders of animals, there is no umbilical cord; as in the Kangaroo, and that infants have been born with the cord spheacelated. — The question, as to whether the functions of animal life are exercised during gestation, has been raised. It is probable that most of them are inactive. The brain and spinal marrow are formed. The senses are fully formed but they are inactive. The experiment of causing motion in the child by placing the cold hand on the abdomen of the mother is explained by remembering that Contraction of muscular tissue is always produced by cold applications. The contraction of the abominal muscles takes place, also that of the uterus to some extent & the child is mad to change its situation. It is probable that the child has tact. During parturition the brain is so pressed upon that a comatose state is brought about and the child does not suffer. — It is impossible that uterine vagitus should occur, because from the very nature of things no air can enter the lungs so as to allow of cries being produced. After the head is born there may be crying. There are four kinds of irregular or extrauterine pregnancy, viz ovarian, ventral, tubal & interstitial.

In ovarian pregnancy the embryo is covered by the peritoneum, the chorion & amnion. The abdominal is when the ovum is developed in the cavity of the abdomen. The cause of these is probably cessation of the erectile state of the Fallopian tubes. Tubal pregnancy ~~may~~ arises from some mechanical obstruction in the tube. A small quantity of mucus may produce it. We have reason to believe that all the cases are more common than they appear to be, because the embryo frequently perishes early & is absorbed without our knowledge. Interstitial pregnancy takes place in the interstices of the walls of the uterus. In these unnatural cases the foetus generally perishes about the 2nd or 3d month. Preparations are made to receive the ovum in the uterus, but they cease after a time. After the death of the foetus, it does not putrify on account of the exclusion of air. The ~~foetus~~ dead foetus has thus been carried for 20 or 30 years. Inflammation and ulceration most frequently takes place, ulceration and abscess are formed. The tumor is sometimes ruptured. Sometimes parts only of the child are formed, as in the specimens where a single molaris, a cuspidatus and hair were formed. — The diagnosis is uncertain. The treatment can only be palliative. The operation of gastrotomy where there is a certainty of the existence of a foetus & there are no contraindicating symptoms. Where abscesses are formed by an abscess make a free incission in order that the child may be discharged from it in as short a time as possible.

Lecture XX Dec 21st

We come now to the consideration of the symptoms of pregnancy. Until the end of the 3d or 4th month no well informed practitioner will venture to give a decided opinion. — The decision of the question of a woman's pregnancy is of immense importance, & demand your particular attention, since the character, and

A serous fluid, or even milk sometimes can be squeezed out of the nipples.

happiness of a female and that of her friends may depend upon the mere expression of your opinion. The signs of pregnancy which are called sensible may be considered first as to the suppression of the menses. If a female be in good health before marriage & she cease to menstruate it is a pretty good sign. This is not positive, since they do not menstruate during lactation. They may, without any apparent constitutional disturbance, fail to menstruate for a term or two, & these have this function performed properly. They may menstruate during the first four months of pregnancy; this must necessarily appear as it comes from the neck of the uterus, or even some portions of the internal surface of its body, the decidua being detached in some parts; the life of the child would be lost, if the whole of the decidua were detached from the womb. Where the menses flow only from the neck, it cannot continue longer than the fourth month; when it continues during the whole of pregnancy the latter condition above mentioned must exist. Again cases have been reported by Dewees & others where the women menstruated at no other time than during pregnancy. You should distinguish between these anomalous discharges and hæmorrhages, which are apt to occur and are of great importance to the development of the child, & as regard to the safety of the mother. 2nd. The mammæ undergo some development especially during first pregnancies. They enlarge both in the cellular & adipose matter & the proper substance of the gland. Blue veins become very distinct on the surface of the breast. * Yet these rules are not without exceptions. Virgins have been known to lactate. Married women who have never had children, & even men have been known to afford milk. 3d. Before fecundation the nipples and areolæ are of a beautiful rose or pink colour, after it they become brown. The sebaceous follicles of the nipple become more developed and secrete a thick sticky fluid. The areola is more developed as to size

adipose matter, and thus is made to become more spungy to the touch. Yet these may ~~may~~ arise from other causes.

4th Changes in the uterus as to its ~~x~~ body and fundus are the next to be considered in their relative positions. In some women after their first impregnation undergo changes similar to those which occur at puberty — grow fat become more rounded & have a greater development of cellular & adipose matter. Generally the waist becomes more full, and generally the first indication of pregnancy is that the clothes become too tight at this part. Some authors are inclined to think that the abdomen becomes more flat during the first 3 months. But I think that when any change becomes appreciable, it is rounded. It becomes more protuberant during the subsequent periods. And owing to the greater laxity of the abdominal muscles this protuberance is more appreciable during subsequent pregnancies than during the first. It will be greater or less according as the woman throws her shoulders backwards or forwards in walking. The deposite of fat in the omentum, or tumour of any kind, or the accumulation of flatus in the intestines may be causes to add to the size of the abdomen. The question as to whether there is single or compound pregnancy is impossible to settle. As a general rule we say that the abdomen is more protuberant in cases of twins but from this we are not warranted, in expressing an opinion. There is pouting of the lips of the os tincae during the first months. The examination of the uterus through the parietes of the abdomen is extremely uncertain. In general in making the examination in this way we should place the patient in the recumbent position, and regulate the involuntary action of the muscles by directing her not to take long breaths. By directing her to breathe

quisk and frequent you will be able so to direct her attention to this matter as to have the muscles of the abdomen perfectly inactive during the examination. The temperature of the physicians hand should neither be too hot or too cold. The patients pelvis & shoulders should be raised, her thighs flexed upon the pelvis & the legs on the thighs to make lax the muscles and fasciae. The most important method of examination is per vaginam. It is one to which the feelings of the female are the most repugnant, & in general should not be resorted to without having examined in every other way. You should not propose to make the examination to the patient herself, but should do so through a third person say the husband or some matronly woman. On making these examinations a third person should always be present. The room should be darkened. Every thing should be done with the greatest delicacy. In truth if a man is possessed not delicacy of feeling and manners he had better not undertake the practice of midwifery at all. In some instances, or the back is the best position but in most on the side, and so then the operator is back of the patient. the delicacy of the female is not so apt to be shocked. After she is properly placed & covered up in the bed by her nurse, you should enter the room without speaking to her, as some women in this situation are extremely apt to be thrown into convulsions by this slight circumstance. The practitioners position should be behind the patient when she is on her side; he should pass his hand up by the side of the leg & to the perineum, and the buckle should be used to separate the labia, & when this is accomplished the finger is passed into the vagina. Ballottement

is a means of ascertaining the existence of the ovum in the womb. The finger is passed behind the neck of the womb & the hand is placed upon the abdomen; the uterus is suddenly pushed up by the fingers, if there be any thing in the womb it moves up against the hand & rebounds against the fingers. The proper posture of the woman is on the back; the operator places himself between her legs. This is a mechanical means of deciding the question of pregnancy & is not infallible. — The feelings of the patient in no instance should be relied on. They are subject to many means of deception. What is called quickening takes place about the fourth month. The popular notion on this subject, viz that the child is not alive until this takes place is entirely erroneous. The child is a living being the moment fecundation takes place. Quickening is said to feel to the female like the fluttering of a bird, the twistings of a worm &c. The motions of the limbs of the foetus are sometimes evident to the casual observer. The time of its occurrence is irregular. On one occasion when after a cautious examination, I stated to a woman's husband that she was not pregnant, he said, "Doctor I have great respect for your opinion, but I certainly have felt the motions of that child"; notwithstanding his declaration, my diagnosis proved to be correct.

Lecture XXI. Dec 23d.

Females of a nervous temperament quicken sooner than those of the lymphatic.

Thus it will be seen that this is a very uncertain means of diagnosticating pregnancy. Women have gone to the full period without quickening.

— The best means of ascertaining the existence of a child in utero is by auscultation. Auscultation may be either, me-

diate, as when the stethoscope is applied, or immediate as when the ear is directly applied to the abdominal parietes. I prefer the first. There are usually two sounds heard, viz the pulsations of the foetal heart, & the bruit de souffle. — The double pulsations of the foetal heart can be heard. They may be counted being about 140, or 150 per minute. The period at which it is heard for the first time, is the 4th or 5th month, as a general rule. Almost always after the sixth month, it may be heard up to the full period of utero-gestation. This sound is heard most distinctly when the woman is lean, or not corpulent, and when the abdominal parietes are very much attenuated, and when the back is anterior, as then the heart will be nearer to the point at which the examination is made. It will be greater or less intense according as there is an approach to this position. When the foetus is looking anteriorly this sound will be the most indistinct. It is generally heard towards the iliac regions, owing to the fact that the head of the child is downwards in most cases & that there is an inclination of the uterus to the right or the left. The pulsations will be heard above or about the median line of the uterus when the foetal dilipse is to head upwards, and below that line when the head is downwards. — The bruit de souffle is a murmuring sound, & this is intermittent and is synchronous with the pulse of the mother. Some call it the placental murmur, since it is not heard unless the placenta is performing its functions. It is heard in the same situation in the same case. When there is much arterial excitement in the mother it is heard over an extensive surface. Diseases of the mother modify it. I do not think with some that it is referable to the small utero-placental vessels which are said by many to exist, because they could not produce so much sound. My own opinion is that it is referable to the uterine vessels opposite the placenta. We must be careful not to confound it with sounds proceeding from other causes, as a throbbing of the arteries in the

abdomen, borborygmi &c. The period at which this sound is heard is variable — generally not until the 4th or 5th month. When this is heard and not the pulsations of the foetus, we may presume generally that it is dead. Yet there are many causes to lead us into error. The liquor amnii may be so large in quantity as to obscure the sound. — Auscultation will enable us to detect the existence of twins. When two foetal hearts are heard to pulsate, one will usually be below & the other above. — The presentation may also be ascertained, as, if the pulsations of the child are heard low down, the vertical end of the foetal ellipse is presented, if on the contrary they are heard near the fundus, then the coccygeal end is presented. — A blue appearance of the lining membrane of the vagina, which is probably owing to venous congestion of the part, has been recently spoken of as a sign of pregnancy. It should be received with great caution. — During the first months of pregnancy, & continuing to full term, there are certain changes in the urine upon standing a few days. A peculiar substance called Kiestein forms a pellicle on top of it. It is a whitish opalescent slightly granular, and may be compared to the fatty substance that swims on the surface of soups after they have been allowed to cool. From the experiments of Blake, (who graduated in this school, in the Spring of the present year) it would appear that it is found in the urine of most pregnant women, that it may sometimes take place during lactation, & that though not invariable, yet conjoined with other signs, it is a valuable means of diagnosis. His experiments were numerous & were for the most part made in the Alms House. They will be found detailed in his inaugural thesis, which was published in July. These are the sensible signs of pregnancy. In the 2nd place we will consider the rational or sympathetic signs of pregnancy. The sympathies of the uterus are said to be the symptoms of pregnancy when they are mild, but when they are excessive they receive the appellations of diseases of preg-

ovary. There are numerous symptoms arising from pressure. Frequent inclination to pass urine is produced by pressure of the uterus upon the body of the bladder and thereby diminishing the capacity of the latter. Pressure of the uterus upon the neck of the bladder, prevents the voiding of the urine; the bladder swells up, sometimes causing retroversion of the womb, and even it may, if not relieved by the timely introduction of the catheter, be burst & the urine escape into the abdominal cavity. — The rectum being pressed upon during the early months, may become painfully sensitive, to the presence of a small amount of feces, Hence the not infrequent superventions of dysenteric symptoms in the early months. In the latter months, as the abdominal muscles have not the power to assist the rectum in discharging its contents, constipation is a common occurrence. The amount of feces accumulated in some pregnant women's large intestines is astonishing. — The stretching of the abdominal & tension of the skin cause much pain in some women, & not unfrequently you will be sent for by them under the belief that labour has commenced. These pains are called false, to distinguish them from those of real parturition. They may be distinguished by the former being persistent and the latter intermittent. During the whole of pregnancy there is danger of ventral hernia, & until the 6th. of umbilical hernia. Femoral hernia rarely or never occurs during pregnancy, for the intestines are pressed away from the femoral ring by the uterus. — The uterus is usually inclined to the right or the left. These obliquities are caused by the spine. The uterus pressing alone on the spine is readily thrown off of its ballance — to the right or the left. The right obliquity is by far the most common; this is explained by saying that the sigmoid flexure of the colon

in the left, does not readily admit the inclination to the left & that the cecum presents less impediment to the right obliquity. In women whose muscles & other tissues are much relaxed, the obliquity will be anterior. In this case the os tincae will be thrown backwards against the sacrum. In the right obliquity it will be found to the left, & in the left obliquity to the right. — By the pressure of corsets or other tight clothing the womb may be forced down into the pelvis, and the os tincae caused to approach the orifice of the vagina. The bowels are prevented from discharging their contents and are distended to a very great extent. — Pressure upon the veins cause hemorrhoids, varicose veins. The oedema to which pregnant women are subject is owing to pressure upon the veins and lymphatics. Sometimes from the same cause the labia are greatly distended & very painful. Pressure upon the anterior crural, sciatic & obturator nerves cause great pain, sometimes spasm, numbness, cramps, and stiffness of the legs. Pressure upwards on the stomach often forces the food out of the mouth without any effort at vomiting. — Amongst the signs that is affectious is an irritable bladder. The vagina becomes elongated. In it there is often a sensation of fullness, heat, & often leucorrhoeal discharge. In doubtful cases this will assist in forming a diagnosis. Sometimes the leucorrhoeal discharge is very copious, and will sometimes be thrown out very suddenly. A similar discharge may sometimes be thrown out from the bladder. These may be mistaken for the evacuation of the liquor amnii. The rupturing of hydatids may take place, and be mistaken for it. — The orifice of the vagina & the vulva are subject to a distressing affection called pruritus vulvae. The odour of the discharge is very bad. Sometimes there are superficial ulcers in the labia, but most commonly you will find no ulcers upon examination even though the discharge be very profuse. The colour of it is

exhibits, its consistence is muco-purulent. It proceeds from general irritation of the system, & of the delicate membrane covering these parts. This general irritated condition is the cause of various disagreeable symptoms. Sometimes the intestinal canal is torpid. Again from irritation there may be dysenteric symptoms. The condition of the stomach is variable. There are often dyspeptic symptoms. The nausea and vomiting is much affected by the position of the patient. It is greater during the time that she is walking or in motion than when she is at rest. Hence the morning sickness, which is falsely considered by many as an invariable sign of pregnancy. A little food will often arrest it. The mental state of the patient affects this symptom. It is more distressing in a depressed state of her mind. Pleasant excitement will drive it away. Hence some pregnant women are always well when visiting and unwell at home. As this state is owing to the peculiar state of the nervous system, there arise various dyspeptic symptoms dependent on a want of proper innervation. The longings of the patient for various outré articles are not to be gratified unless reasonable. The popular notion is entirely wrong. The foetus is not affected if they be not gratified. Fastidiousness of taste is very often another symptom. The duration of these annoyances is variable. Some suffer only a month. Some three or four, & even sometimes they continue until the full term. They are usually the most severe during the second and third months, and begin immediately after the suppression of the menses. — The liver is often painful & functionally deranged. The urine is highcoloured, bowels torpid, skin sallow, & even sometimes jaundiced. — The skin sometimes becomes covered by brown or yellow spots called maculae. They usually ap-

spots upon the face and neck, and are of little consequence & usually go off after delivery. They seem to depend upon hepatic derangement. — There is sometimes salivary derangement; great excitement of the salivary glands & a thick, ropy & sometimes very abundant discharge takes place from them. The gums do not inflame. — The mammae almost always become enlarged, slightly painful, & sometimes secrete milk. When this is inordinately excited it is called Mastodynia.

Lecture XXII. January 29th '43

The pain in mastodynia does not proceed from inflammation — for the irritation is never so great as to amount to this, — but from a distention of the tissues composing the mammae; and truth it is more a nervous affection than any thing else. The liver during pregnancy, both from sympathy & pressure, becomes torpid, and, as a consequence of it, we often see females, during pregnancy, have jaundiced or yellow skins. — There are also certain general symptoms which proceed from pressure or from sympathy. By these general symptoms we mean such disturbances as proceed from disturbances of the minor systems, such as the digestive, the circulatory, the nervous &c. We then speak of disturbances of the nervous system. The nervous system is involved independent of any vascular excitement. The disposition is often much altered. Some women who were amiable before marriage become querulous, cannot bear to be spoken to. Their moral courage is lost, — they become melancholy. — Some again naturally melancholy become very sprightly & are in high spirits during the whole of pregnancy. The muscular powers are often increased; Women will often walk farther during pregnancy than they could before. Sometimes irregular contractions of the muscles

take place. The lungs become affected from this nervous disturbance, so that they are affected with dyspnoea, cough & a sense of tightness across the chest. The heart is also affected, as with palpitations. There is also to be often met with a nervous chilliness, which is different from common chills in as much as it is followed by no febrile reaction. Hysteria, or violent convulsions may occur. Sometimes there is an opposite condition, as is seen in the faintings to which many are subject upon slight exertion. Some are subject to cephalalgia, others to otalgia, others to odontalgia, and others to various nervous pains. Extracting the aching tooth does not relieve the patient. — In most pregnant women there is plethora. Febrile excitement is rare. The plethora is a happy provision of nature to supply nourishment to two beings. In pregnancy it is general, and not as in women who have ceased to menstruate, confined to the larger vessels. It does not usually occur before quickening. It is greater at each menstrual period. Plethora is known to exist because the patient complains of fullness. There is a general distention of the skin from fullness of the capillary vessels. The superficial veins are seen to be distended, the pulse is full & strong. There is a sense of fullness about the head, (sometimes the patient cannot see for a few minutes); sleepiness is often a consequence of the fullness of the head. The disposition to fall asleep is greater in the recumbent posture than when standing. From engorgement of the chest, there will be palpitation upon exertion. Stricture about the chest also arises from plethora as well as from nervous derangement. Stricture about the precordia is greater after

sting. This includes the liver stomach & spleen. The most important of the affections is engorgement of the uterus. The patient complains of great weight cannot walk so well. In this state of the system there is a great disposition to effusion. Hence oedema of the cellular tissue is common; epistaxis, haematamesis, haemoptisis, haemmorrhoids &c are very common. Plethora of the brain may produce apoplexy, headache, vertigo and convulsions. Apoplexy of the lungs & engorgement of the vessels of the heart, are consequences of plethora. Sometimes there is a sudden discharge of blood from the vagina owing to the separation of some portion of the placenta, or the rupture of some of the uterine vessels. That there is some alteration of the ~~lungs~~ is proven by alteration of the secretions. Sometimes the buffy coat is evident in the blood. —— Fever sometimes exists without plethora in delicate females. Obstetricians generally say that married women live longer than unmarried ones. This is not well settled. It is still a subject which, is, worthy of further investigation. - These cases are not treated as the ordinary ones of fever and plethora. Analyze well the symptoms. Cases which arise from nervous derangement are made under the influence of moral regimen. Nervous irritability may be diminished by supporting the system. Nutritious diet, walking or riding, the administration of the bitter tonics (sometimes quinia may be resorted to) cold bathing if properly performed, the antispasmodics, as asafoetida and ether, and sometimes of prussic cautiously administered are the principal means of combating the nervous

derangements. — Plethora often exists without irritability. As a general rule irritability is inversely as the strength. Plethora is rarely inconvenient before the 4th, 5th, or 6th month. When it exists it is to be combated by direct evacuation. It is better to use means to prevent it. Commence early with a vegetable diet. Porter, ale, and wine are injurious. The quantity of drinks should be regulated, they increase the amount of circulating fluids. The popular notion that the inability to undergo fatigue of the slightest kind arises from weakness, is wrong. It arises from plethora, as is proved by the fact that patients can walk some distance after evacuation has been performed, who were scarcely able to walk at all before. Exercise is another preventive of plethora. Where there is much irritability exercise is improper, as in ~~where there are~~ pains in the back &c. Exercise facilitates various functions. It is not proper when there is fever, or in plethora until the plethora is relieved. Nothing is better than laborious exercise to prevent rigidity. Hence women who labour are delivered more easily than those who do not. Up to the full period it is better that it be taken. A woman who had walked six miles upon the day of her labour was delivered with a great deal of facility. The cold shower bath in the summer is very good. The tepid bath properly taken is very good. But I have much confidence in recommending the cold bath. The bowels should be evacuated every day. Besides medicines which ~~exercise the~~ increase the peristaltic action of the intestines, the saline cathartics are useful. They

are useful by exciting the secretions & diminishing the plethoric state. Bleeding is very important. It should be performed as early as possible. A large amount should be taken at one time to prevent repetition. 10. 20, or even 30 ounces may be taken at a time. In fever with plethora the antiphlogistic treatment is indicated. In fever without plethora a supporting plan is to be pursued.

Lecture XXIII January 4th 1843.

We come now to treat of the management of the local symptoms which arise from pregnancy, and are sometimes so great as to require our attention. The bladder when pressed upon will require relief, by changing the position of the uterus or by the catheter. The catheter will often require to be curved like the male catheter. The handle of the female catheter, (if this is used) will have to be depressed, on account of the change in the direction of the urethra. — When the rectum is pressed upon, it will becomes irritable, the uterus must be elevated, — some recommend a resort to the pessary. Sometimes where there is much relaxation of the muscles, when the uterus rises above the pubis it hangs over that bone, & from pressure gives much pain. The proper remedy is a bandage so applied as to give support to the womb, and not to press upon it so as to force it down into the pelvis, or backwards against the spine. The bandage may often be applied better, by assisting it with a shoulder strap. In the latter stages of pregnancy the rectum is often filled with impacted feces. It must be emptied by mechanical means if purgatives of a mild character fail, such as by injections, & washing it out, or by scooping it out with the finger or some instrument adapted for this purpose. — A spoon handle will often answer the purpose. Pain in the muscles, or skin, or other tissues, arising from distention is often relieved by position — (generally on the

back is the best of, and oleaginous, or oleaginous & anodyne liniments. — Gaseous accumulations in the intestines often give much pain. This is relieved by carminatives & such by enemata in most cases. — When hernia occurs it must be attended to, as the patient is constantly in danger of strangulation. The common trusses for this purpose will rarely answer, because they extend around the body and give rise to much inconvenience. Generally, and in umbilical hernia especially, a thick compress over the place of the protrusion, secured by adhesive straps will answer admirably. In vesical hernia, which is produced by the rising of the uterus above the bladder, & the consequent confinement of the bladder below the pubis it is necessary that the bladder should be frequently emptied. — Women should never wear corsets or other tight clothing during pregnancy. Though they may think that the abdominal muscles are relieved by it, yet they are extremely liable to abortion from this imprudence, in consequence of the irritability of the uterus brought on by the undue amount of pressure exerted upon that organ. The best exercise for pregnant females is walking. — When hemorrhoids occur, the symptoms should be palliated. The best means are cold applications, cold lead water. Warm applications are not as good as cold. Astringent applications may be resorted to. Leeches may also be applied, but they are not as effectual as puncturing the tumour with the lancet. — There is often an anasarcous condition of the lower extremities; also varicose veins, & cramps, caused by pressure upon the absorbent & venous trunks & upon the nerves. The remedies are rest, liniments to soften the skin, warm bath, & the proper application of bandages. On account of the difficulty with which the application of the bandage is at —

Amid the amasanca.

tended, and the ease with which the indications are filled by other means I never resort to it as a remedy in these affections. Sometimes if this condition is not attended to there may be inflammation, which it is important to arrest as it may terminate in sphacelus. The resort to puncturation is often necessary to relieve the varicose condition of the veins. After this operation is performed the patient should be kept in the horizontal position, on account of the danger of the supervention of erysipelas. Numbness & cramps are relieved by stimulating liniments frictions & the warm bath. — We will now speak of the diseases consequent upon the sympathies of the womb. — The affection of the vagina accompanied with a leucorrhoeal discharge should be treated by venesection, leeches, cathartics, which do not affect the uterus, cold and astringent injections into the vagina, and lotions of the same character to the vulva. Cold water in general is the best; Sulphate of zinc is the best if any thing else be applied, than the water. — Pruritus vulvae is treated with cold applications. A wash composed of borax and water as strong as the patient can bear it is one of the very best applications. This affection is not always local, and hence will sometimes require general treatment, as venesection, cathartics &c. I have found Copaiba very useful. After the failure of these remedies we have to resort to a solution of nitrate of Silver, applied with a camel's hair pencil or some delicate mop. Generally we may use from 6 to 8 grs dissolved in ℥j of water. — For irritable rectum we may use the same remedies upon general principles. Copaiba is useful here also. Sometimes an anodyne enema will be necessary. — In irritable intestines generally attention must be paid to the diet. It should be of the farinaceous kind. Purgatives sometimes are necessary; Rhubarb is particularly

useful. The various sources of the irritation should be guarded against & removed. Hence a resort to antacids is necessary. Such as creta preparata, soda &c. Sometimes it is so great as to produce diarrhoea, when it will be necessary to resort to astringents as kino, krhatany &c. — In treating the sympathetic affections of the stomach there are two indications to be filled, one to relieve the local distress by remedies addressed to the organ itself, another to use means to moderate the gestative action, which is the cause of the affection. 1st As to the local treatment. Since the peculiar state of the stomach is not that of irritation but rather that of sedation, with a view to relieve the nausea it is necessary to administer stimuli. No stimulus is better than the natural one. Hence never allow the stomach to be empty. The best stimuli are not drinks but solid animal food. The patient should use animal food at breakfast & dinner, & in fact every three or four hours, between meals. A little food before rising will often prevent the morning sickness. Carminatives are useful, but caution should be observed in the use of powerful stimuli. Fresh air, change of scene & other like means are useful. When vomiting takes place it may often be quieted by lime water & milk, aromatic articles, mint & catnep teas, & sometimes more powerful means may be resorted to, as wine, porter & even brandy. Sedatives are found in turpentine efficacious. Oil of this is a disagreeable remedy. It may be given in the dose of about 20 gtt. Counterirritants as mustard plasters, rubefacient liniments &c may be sometimes necessary. They should be applied over the epigastrium. Mild emetics as, Ipecacuanha sometimes relieves by assisting the stomach in emptying itself. The bowels should be kept open. When not performing their functions they are liable to take on a reverse action, and

thereby increase the vomiting. Hence where purgatives cannot be administered, enemata should be prescribed. Of the gastrodynia I will only say use the common means of relieving it. So also of pyrosis. The profuse salivation should be cautiously interfered with as it acts as a drain to the system, & its sudden cessation may be attended with serious consequences. The longings of the patient may be left ungratified since it cannot have any effect upon the foetus, the popular opinion to the contrary notwithstanding. The 2nd indication, namely to make less energetic the gestative action, is fulfilled by directed remedies to the uterus, as by injections of laudanum, the hip bath & such general remedies as will tend to arrest in some degree the activity of the system generally. — In torpor of the liver there is no objection to the use of stimulating remedies; a mild mercurial course should be pursued; the proper use of alkalies. Salivation should never be produced in this case by mercury. Antimonials are in general objectionable, as the system rather needs stimulation, than the opposite state produced by them. Sometimes a resort to tonics is necessary, and are often found useful. — If salivation is profuse, (it should not be suddenly arrested,) we may use pretty much the same remedies as in the affections of the stomach. — The same remarks are applicable in with regard to mastodynia. Locally we should not use counterirritants but fomentations, or leeches, & such remedies as will relieve the tension, which is the cause of the severe pain which is often felt. (Warrington says that the Belladonna or soap plaster will often relieve.) — In the treatment of local nervous affections it is important to distinguish between neuralgia and inflammation, & the treatment should be pursued according to the result of the diagnosis. Sometimes the pain

is purely nervous, as in cephalalgia otalgia &c. Be careful to find out whether plethora is existing at the same time, for it may produce many symptoms of nervous derangement which may be relieved by the simple application of the lancet. Sometimes patients die from plethora, who were thought by their physicians to be labouring under purely nervous affections. Plethora rarely occurs before the fourth month to such an extent as to produce these violent symptoms. In treating these local nervous affections be sure to enquire whether the system is involved. Nervous headache is treated with revulsives; dry stimulants to the head &c. It may be prevented by proper attention to the stomach in most cases. – Affections of the chest of this character are treated by revulsive means, as cups, leeches &c then by the use of antispasmodics. – Nervous excitement of the uterus produce the pains called false, which may eventuate in true pains, & finally abortion. Irritations about the bladder & intestines is also present. When plethora is its cause venesection relieves. When nervous, fomentations, poultices & anodyne enemata (20 or 30 or 60 gtt of laudanum usually) are indicated. – When there is neuralgia find out the cause; remove that is the first thing to be done. You may use anodynes as opium, morphia, cicuta, hyociamus &c. In odontalgia a tooth should never be extracted on account of the reflex action of the nervous system, conveying the agitation to the uterus, & thereby producing abortion. – These are the general principles in the treatment of these affections, I cannot of course go into detail concerning them, I leave it to you to extend & carry them out in practice.

Lecture XXIV Jan 6th 43

We come now to speak of labour. It is that function by which the ovum is expelled from the uterus. It is essentially a vital process, & under

the influence of vital laws. These laws are modified to some extent by mechanical resistances. Hence they speak of the mechanism of labour. Yet it is not a mechanical process. — It is not easy to fix the duration of pregnancy. The difficulty arises from the insufficiency of fixing the precise time of conception. It is usual to date from the time midway between the last menstruation and the time that menstruation ought to occur if pregnancy do not exist. Dr Merriman uses a more scientific method. He commences to estimate from the cessation of the menses. Thus making the period about 35 days shorter than usually estimated. He considers it to be 10 lunar months or 280 days. Estimating from the period above mentioned to the time that labour occurs there are 9 calendar months. By adding 10 days to this to allow for the interval between the last day of the flow of the menses we will have 283 days the common calculation. No doubt can exist, but that its duration may be as much as 10 calendar months, or even 311 days as was proven in a case in Great Britain. Dr Dewees knew of a case which was of 293 days duration. — When pregnancy is thus protracted the child grows & becomes more vigorous. — This time may be much shorter, parturition may take place at any period after conception, constituting what is called abortion. If children often live, when born during the eighth month, they are considered viable after the seventh month; they rarely live when born in the sixth month, one or two instances have been recorded to have lived when born during the fifth month. — The question arises as to the cause of labour. They may be divided into inherent or natural & accidental. 1st There is a natural law which causes the process to take place at a particular period; various means have been employed to explain this cause of it, yet they are merely various ways to express the same fact. 2nd The uterus may be stimulated to contractions by various means, such as mechanical causes, by sympathy, as by mental emotions from sympathy with the brain, sympathy with stomach, the bowels, the heart lungs, rectum and bladder &c &c. Disorders of the stomach & intestines are the

most frequent.— The powers called into action during the exercise of this function are worthy of consideration. The fœtus is always passive, That it exerts no influence in bringing about this process is proven by the fact that a dead child may be as easily delivered as one that is living. Petit an accoucheur who lived about 100 years since was the first who designated the uterus as the principal power in effecting the expulsion of its contents. That this is the case is proven by the facts that the patient feels its contractions — by the accoucheur being able to feel the organ contract by placing his hand on the abdomen of the woman — & by passing his finger into the uterus itself per vaginam — also by the effects of its contractions on its contents. That labour may in a great degree be effected without by the contractions of the abdominal muscles & the diaphragm. These contractions are involuntary, yet they are influenced by the mental & moral state of the patient in many instances. They may be brought on by violent passions. In some cases where there is anxiety that labour may not proceed it is hastened, And where there is anxiety that may proceed it is stopped. There are two kinds of contractions viz tonic and alternate or intermitting. Tonic contraction is regular & permanent; it is synonymous with tonic rigidity. It is not attended with pain. It causes a general rigidity & gives a greater consistence to the uterine tumours. — The alternate contractions are also called, painful contractions, labour pains, also convulsive contractions. They cause the expulsion of the contents of the organ. Whether the pain which accompanies them is the result of the curse originally pronounced upon Eve, or is the result of circumstances no one can decide positively. It is asserted that savages have not these severe pains. The pain is not always proportioned to the power of the con-

traction. Madame Boivin says that it is exclusively situated in the neck of the Uterus, yet there can be no doubt but that it is also experienced in the body and fundus in many cases. It commonly commences with a slight pricking or tingling feeling which many women call flea-bites. — The fibres of uterus are so arranged as to act on the ovum in every direction. The womb may be considered as a perfect cavity closed every where except at the os tincae, for the orifices of the tubes are so small as to exclude the idea of their deverting any influence. The longitudinal fibres draw open the orifice. They are antagonized by the circular fibres at the neck. The circular fibres gradually give way to the superior powers of the former. They continuing to contract cause the dilating orifice to become very hard; in many cases it feels as hard as a board. When once the longitudinals gain a superiority over the circular fibres, the dilatation of the orifice proceeds rapidly. Hence though they may occupy several hours in dilating it to the size of a half dollar, after that delivery may take place in half an hour. I cannot think that the ovum produces the dilatation on account of the delicacy of the membranes. It merely forms a mould about which the orrifice is dilated. That part of the membranes which pass out of the orifice of the uterus after its dilatation is called the "bag of waters". This term is only applied to the part of the ovum which is protruded into the vagina. Its form is modified if the amount of fluid be not too great by the particular part of the foetus which is presented. It is usually hemispherical, & about 3 or 3½ inches in diameter. When the contractions become powerful the membranes give away & the liquor amnii comes out with a gush. The remnant of fluid is discharged according to circum-

circumstances. Sometimes when the foetus is pushed against the membranes these ~~rupture~~ a small quantity or none at all. The remaining portion of the fluid will escape as the labour advances. The membranes burst at that part of the bag which is towards the orifice of the vagina from mechanical causes. After this labour advances very rapidly & the child is expelled. The tonic contraction then takes so as to embrace the placenta; it is seperated from the womb, the patulous orifices of the vessels opposite to it are closed thereby preventing hemorrhage, & it is thrown by this species of contraction in to the vagina, but no further. The assisting powers are the abdominal muscles & the diaphragm. The force the uterus towards the pelvis & by pressure upon the fundus & body, assist the expulsion by ~~the~~ the a process similar to that which is called into action during the effort at expelling fæces from the rectum. These assisting powers are under the control of the will & are called into action at the request of the physician according as the exegency demands. (In explanation of the fact that the moral condition of the patient ~~exercises~~ an influence in bringing on the contractions of the uterus, I use the term metastasis, you may adopt it or not as you please. The great anxiety for instance under which the patient often labours, produces an irritation in the brain and this is transferred to the uterus producing contraction of its fibres.) — After the expulsion of the placenta there are what are called after pains, which are produced by the contractions of the uterus in the effort to expell the coagula of blood which are in the organ always after labour. At the next lecture we will direct your attention to the symptoms of labour.

Lecture XXV Jan. 9th '43.

The position of the childs at the full period is of some importance. The most common position of the foetal ellipse is with the vertices, inside downwards, and the occiput anteriorly. The os uteri is high up on a level with the promontory of the sacrum, and very near the bone. Indeed, sometimes it rises up so as to be concealed by the promontory. In such cases you must examine very carefully, as from a superficial examination you may be lead to believe that the uterus is imperforate, and come to the conclusion that an operation ought to be performed to effect the delivery. The vagina is elongated, the bladder compressed & the rectum lies behind the vagina, being sometimes pressed upon. —— We will now speak of the symptoms of labour. 1st Of the premonitory symptoms. When studying the symptoms, we should always keep in mind the powers in action during labour. These symptoms may continue for several days. One of the first symptoms is frequent and irregular pains, passing generally from the small of the back around to the arch of the pubis. As they become more and more acute the labour may be looked for. There is a diminution of the abdominal tumours, called commonly "the falling down of the womb". The tonic contraction taking place the womb becomes smaller, and at the same time more conical, on account of the contraction of the circular fibres; hence the tumour is diminished in size from the diminished size of the womb & from its falling more into the cavity of the pelvis. The effects of this is pressure upon the parts below, and a relief of the parts above. Hence when we find that the emaciation is increased together with all the disagreeable symptoms which arise from pressure of the womb downwards, & that those parts which were pressed upwards are relieved, as is shown by a greater freedom in breathing, relief from the affections of the stomach before alluded to, and those of the brain, in short when we find together with others symptoms that the patient finds she is very unwell, & has a high flow of spirits we may very justly conclude that labour is about to commence, or will probably take place the next day.

Another symptom is the secretion of a mucous or less coloured slimy fluid from the vagina. When it is mixed with blood it is a sign that the membranes have separated from the mouth of the uterus. It is a proof that labour is near at hand. It is commonly called a "show". When spoken of in this way the women immediately understands what is meant. ——

We speak now of the symptoms proper. Labour may be divided into 3 stages, 1st dilatation of the os uteri, 2. delivery of the child. 3d delivery of the placenta. Saying that labour occupies 12 hours, the 1st stage will generally occupy about 10 hours, (sometimes even 11½ hours), the 2nd. 1½ hours & the 3d the remaining half hour. — 1st Stage. The dilatation of the os uteri is effected by the alternate contractions of the organ as already explained. Hence it is accompanied with pain. The pains at first slight, commencing in the inferior part of the back and passing around to the pubis. They are called flea bites by the women. They become more and more acute, shooting down the thighs in the directions of the sciatic nerve. They are called lancinating, cutting, grinding pains and are sometimes very severe, producing a disposition to bear down, which should never be encouraged until the mouth is fully dilated. Towards the end of this stage the pains frequently become very severe. They are apt to hold their breathe and make these bearing down efforts.

The nervous system is affected through sympathy. The patient is petulant irritable and despondent. There are nervous rigors, not accompanied with febrile reaction. The stomach is often disturbed. There is nausea, & vomiting. It is a common remark that sick labours are easy labours. This is true to a great extent for the relaxation consequent upon it facilitates the dilatation and overcomes the rigidity which is often a very great obstacle to the easy termination of labours. The pulse in this stage is soft and feeble. Relaxation of the parts depends on secretion. The secretion of the vaginal vessels, relaxes the part by freeing it of much of the blood with which it is engorged. Also the uterus when the soft parts become relaxed. There is an effusion of serum into the cellular tissues. The pain in labour is greater amongst women in civilized life than in the savage and amongst the higher

than the lower ranks of society. When the os uteri is thick the dilatation is more rapid than when it is thin. In the former the circular fibres are more relaxed, in the latter more tense. However when the former state of things exist the labour is terminated in a shorter time, in the latter it is more protracted. In making out the prognosis the practitioner will often find himself deceived if he depend upon this alone. Provided the membranes be not ruptured there is little or no danger as regards the child, although this stage be very protracted. The mother will not be affected by it unless the pains be very severe; in this case convulsions may be brought on. — 2nd stage. The os uteri being dilated, the pains become stronger, the patient holds her breath, fixes the shoulders & pelvis, makes tense every muscle in the body, pushes downwards and forwards the uterus by the bearing down efforts of the diaphragm, pushes it backwards by means of the abdominal muscles, (the accessory powers thus compressing the womb, simultaneously with the contractions of the organ itself,) from holding the breath the blood stagnates more or less in the lungs & produces asphyxious (sometimes convulsions), the arterial system becomes disturbed, the pulse is more full & vigorous, there is copious aeration from the skin, that from the vagina now becomes very profuse, the mind of the patient is in a being full of hope.
better condition, the nervous system is often disturbed, hence rigors, tremors, & spasms of the muscles particularly cramps in the gastrocnemii, delirium sometimes takes place, at any rate restlessness and agitations are very common. The child is pressed upon with great power. It is forced into the vagina. The pressing of the child's head against the perineum causes great distention of it and in first labours is often lodged in it alone after it has escaped from the pelvis. The anterior portion of the lining membrane of the rectum may often be seen. Therefore be careful in this part of the labour. The pains produced

by the stretching of the perineum is agonizing. The patient will often exclaim that some one is cutting her. The head is at last delivered, the patient is relieved, there is a change in the state of her mind. In the latter part of this stage she is apt to become despondent, now she is in extasies. She will often express herself by saying that she feels as if she were in another world. All is joy with her. The relief is so great that this change in the feelings is often instantaneous.

In this stage the dangers to the child and to the mother are very great. Therefore be careful. The physician should not be far off when it comes on. The duration of it is as a general rule as stated above. It may be completed by one powerful contraction. The causes of delay are numerous, as the irregular contractions of the fibres of the uterus, rigidity of the soft parts, mal presentations &c. The dangers to the mother during this stage are, detachment of the placenta before the contractions take place so as to close the patulous orifices of the veins &c of which spoken of, ruptures of the uterus, of the vagina & bladder, tearing of the perineum &c. The dangers to the child are very great. It may be so pressed upon that apoplexy of the heart and lungs. apoplexy may be produced, or the cord being pressed upon it may be born in an asphyxiated state.

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After the expulsion of the child in a short time the uterus again contracts, the placenta is separated, thrown into the vagina, and thence by the voluntary efforts of the mother or by the hand of an assistant is delivered together with its membranes. There is much need of caution; the danger to the mother in this stage is immense. The time occupied in the completion of this stage is about as before stated but it may vary. Frequently it is protracted, again it is often effected by a single pain, and even be completed by the same pain which expells the child. Sometimes the whole mass is detached from the uterus at

the same time and expelled without rupture of its membranes.

But we must go more into details on this subject. We must study the mechanism of labour. By this is meant the mode in which the powers brought to bear in labour are modified & made to effect such a change in the position of the child as to expell it from the mother. Hence we must study the directions in which the forces act, the presentations of the child and the progress of it in its way to the exterior of the mother. — The axis of the uterus, before the contractions of the abdominal muscles and the diaphragm commence, does not correspond either with that of the body or the superior strait, but is intermediate. When these take place by the action of the diaphragm through the medium of the viscera the fundus is thrown forwards, and axis corresponds to the axis of the superior strait. Hence we see that all the powers act in the direction of the axis of the superior strait. When the child goes down it strikes upon the posterior inclined plane, has its direction changed by it and is thrown off in the direction of the sacrum, the coxyx and by the perineum, finally making its exit under the arch of the pubis. — By presentation is meant that part of the child which corresponds to the centre of the superior strait, or the centre of the orifice of the uterus, which is pretty much the same thing. By the position of a particular presentation we mean the relations which it holds to the maternal pelvis. Labour may vary according to the presentation of the child, the condition of the mother physiologically or anatomically & the anatomical peculiarities of the child. I divide labours into natural or simple & complex, or as some say eutocia & dystocia. 1st Natural labours or eutocics are fortunately by far the most common. In order that they may occur, it is necessary that the mother be healthy both functionally and

Positions

matomically & that no part of the child be too large to be delivered through the straits of the pelvis. I am in the habit of calling those labours natural in which either of the extremities of the foetal ellipse presents. Hence we speak of presentations of the cephalic extremity, as vertical and presentations of the coccygeal extremity of the foetal ellipse. The first is by far the most common. The probable reasons of this are, first that the head being heavier than any other part naturally falls towards the os uteris, secondly because it is the most favourable of all the presentations. There are various positions of this presentations But for all practical purposes six are sufficient, three having the occiput anteriorly and three having it posteriorly situated with regard to the transverse diameter. The first three are more favourable because the head can be more easily made to follow the concavity of the sacrum & make its exit under the arch of the pubis. The best reason I can give for this, there being more room is that the shape of the foetal ellipse corresponds better to the cavity of the uterus than in any other position. Velpeau ascribes it to the greater weight of the posterior part of the foetal ellipse. — The first variety viz. the occipito acetabular position is the most common of all, and is probably to be ascribed to the fact that the ligamentous pleasure of the uterus is relaxed during pregnancy, than the reasons. In this position the occipito-bregmatic diameter of the head corresponds to the oblique diameter of the pelvis which extends from the left acetabulum to the right sacro-iliac symphysis — the bi-parietal diameter corresponds to the other oblique diameter of the pelvis. The occipito mental diameter corresponds to the axis of the superior strait. As the child's head goes down, it will be turned by the action of the uterus & pelvis so as to be presented at the inferior strait having the occipito-bregmatic diameter corresponding to the antero-posterior diameter of the strait & the bi-parietal to

the transverse. — In the second position the right occipito-acetabular the same diameters are engaged. The occipito bregmatic of the child corresponds to the oblique diameter of the pelvis extending from the right acetabulum to the left sacro-iliac symphysis, the biparietal to the others and the occipito-mental is in the axis of the superior strait.

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After the parietal protuberances pass the vulva the remaining portion of the head passes out very easily. In the first and second position the head passes out of the ~~super~~ inferior strait under the pubis in such a manner as to rise up when fully delivered, leaving the occiput in front of the symphysis. In these two positions the head is twisted upon the neck. The restitution takes place as the delivery advances and the head now occupies the same relation to the child's body that it did when engaged in the superior strait. After restitution takes place the shoulders command attention. The inclined planes cause rotation in the first position in such a manner as to throw the right shoulder under the arch of the pubis; in the second position it is the left shoulder which is thrown under the arch. In the second position the rotation takes place with more difficulty on account of the position of the rectum. — In the third position the occipito bregmatic diameter corresponds with the antero-posterior diameter of the pelvis & the bi-parietal to the transverse. This position frequently changes into — the first or second on account of the convexities of the forehead and the spine at the promontory being in contact. There is no rotation & no restitution. There may arise difficulty about the shoulders. — In the fourth position the nape of the neck is towards the ~~by~~ right sacro-iliac symphysis. It is the reverse of the first position. The forehead comes out under the arch of the pubis. The shoulders may be delivered in this position in such

a manner that the left or the right may advance under the arch of the pubis. There is much danger of a perforation of the anterior parietes of the rectum, and of rupture of the perinæum.

Lecture XXVIII. January 16th, '43.

It very often happens that the occipito frontal diameter corresponds to the antero posterior diameter of the ~~pelvis~~ maternal pelvis. This being 4 inches cannot be easily delivered. My plan is to convert the occipito-posterior positions to anterior ones. — We will now speak of the 5th position. In the 5th position the nape of the neck is towards the left sacro-iliac symphysis, the anterior fontanel being to the right acetabulum. This position is the reverse of the 2nd. In the delivery of the child's body owing to the tension of the perinæum there is more or less of a curvature of it, the concavity of the curve being towards the pubis.

The 6th position is when the nape of the neck is towards the promontory of the sacrum; it rarely occurs, being converted when it does, in a vast majority, into the 4th or 5th.

In the higher classes of society there is more rigidity of the os. uteri than amongst labouring women. This is owing to greater weakness of the longitudinal fibres. The abdominal muscles are so weak that the accoucheur will often be compelled to resort to the instruments or to other assistance to enable her to deliver herself of her child, even though in every other respect the labour be perfectly natural. — It should be borne in mind that in a vast majority of instances no assistance is necessary from the practitioner, except to be present during the labour and receive the child & see that it and the mother are properly attended to. His duty is to see that labour be not interfered with.

In preparing for labour we should see that there exists no plethora. If there be the remedy is V.S. To prevent it, for several days or even for weeks she should use a vegetable diet. Costiveness should be avoided, hence you may use mild laxatives, such as the sweet oil, or castor oil, or if these be not sufficient the saline cathartics. The popular notion that the woman requires strength

& must therefore use animal food & stimulii is entirely wrong. The bladder should be attended to, & the catheter introduced if necessary. — There are often irregular or false pains which may be removed by laxative treatment; again there are pains which are readily relieved by anodyne treatment. ——— The room for a lying-in woman should be large and well ventilated; — there should be a chimney rather than a stove or flue — bed curtains should be avoided, — the facilities for darkening the room should be at hand. — In France ~~and~~ it is customary to deliver the woman on one bed and then remove her to another, but in England and this country it is thought best to have only one bed, to avoid removing the woman as this renders the liability to hemorrhage greater, and the dangers from a sudden change of temperature (for it must be borne in mind that the woman perspires profusely) much less. The bed should be of such a width as to allow the woman to lay with her body across it. It should not be closed at the head or foot, as in those bedsteads called French; there should be posts high enough to allow the woman to press her feet against one of them. A towel should be tied to the same post against which pressure with the feet is made. — There should be two pieces of oil cloth or something similar ~~un~~placed near the foot of the bed and another in the middle. The clothes of the woman should be loose, and so raised up over her hips as not to be liable to be soiled by the fluids. There should be sheets entirely separated from each other so that those which are over the cloth in the middle of the bed ~~shall~~ will be dry for the woman to lay upon when labour is completed. Over the woman the bed clothes may be thrown. — The accoucheur should be provided with towels ligatures, scissors &c, to protect himself and absorb the fluids, & to tie & cut the cord. A warm bath should be ready ~~of~~ so that if necessary the child may be bathed. Also some stimulii as alcoholic liquors, Ammonia, ~~Camphor~~ &c. A band for the woman's abdomen should provided. — Attends to the pulse, attends to the bowels, ~~empty~~ empty the rectum if necessary by enema-

tea - gin camphor or ether to allay the nervous rigors when very severe and attended with no febrile reaction - regulate the conversation - do not permit more than one or two or at most three persons to be present - send out of the room all loquacious - meddling women - never make promises - encourage the patient - and make no more parade than is necessary in any of your movements. In this stage the woman should be allowed to choose her own position. She should not bear down during this stage, for it does not hasten the dilatation, and may do much harm by rupturing the membranes prematurely. Many children are lost by this, and the life of the mother more or less endangered by this accident. The mouth of the womb contracts around the head of the child, the child is preped upon and more or less injured thereby, & the dilatation of the os uteri is in reality less advanced than before. — The diagnosis of labour is uncertain. False pains are difficult to be distinguished from true ones. False pains come on suddenly and are often very severe; they are irregular; they may depend on some local irritation; if so it should be removed. True pains are alternate. I believe the false pains exist in the uterus itself in many cases. An examination per vaginam will often show this. When these false pains are felt the os uteri may be more or less dilated. But generally speaking it is a pretty sure sign that labour has commenced. — The best mode of treating these pains is to remove the sources of irritation if they can be discovered. In general they yield to anodynes. If there be flatulence remove it - if nausea or vomiting exist and is distressing use warm water to assist in unloading out the stomach.

Lecture XXIX. January 18th 1843

We speak now of the management of the second stage of labour. As soon as the os uteri is dilated the patient must be placed on her back in the manner directed in the last lecture. We think this is im-

portant, because the child may be suddenly delivered, and sustain considerable injury by falling on the floor, or from hemorrhage following an accidental rupture of the cord, & the mother is in danger from hemorrhage should a portion or the whole of the placenta be detached. It is important that the female be placed in such a manner that the axis of the body may correspond as nearly as possible to the axis of the superior strait. - For the sake of delicacy she may be placed on her side; and this position will answer for most of the operations of the accoucheur. - The accoucheur should then make an examination per-vaginam. Make it during a pain. It is what is called "taking a pain". Carry the finger into the vagina during a pain but do not touch the membranes during the pain, for you may thereby rupture them prematurely. - If you find that the os uteri is sufficiently dilated, you may rupture the membranes by pressing the finger against them during a pain, If this do not answer wear them away by scratching with the finger nails, or if this fail you may take the common pocket case probe. I do not approve of the use of sharp pointed instruments for this purpose. If you have made your diagnosis correctly this may be resorted to, to facilitate labour, since the smaller the wound is, the more powerful are its contractions. They should be ruptured at the commencement of a pain & not at the end. For in the latter case there is more probability of the head of the child being within the orifice of the organ & consequently the labour retarded by a decrease in the dilatation of it. Sometimes the head is in close contact with the membranes; in this event the water cannot be evacuated until the labour is further advanced. Take care that you do not scratch the scalp instead of the membranes. You should be furnished with napkins or cloths to absorb the fluid as it flows out & to protect yourself & the patient from a wetting. After the rupture of the membranes encourage the patient to bear down. Sometimes it is necessary to instruct them in this. From delicacy they often fail to obey you in this command; but

you must insist on it. The feet may be fixed against the bed post, the towel being pulled against the breech. The knees should be separated by means of a pillow or other article for the sake of convenience in all the operations about the vulva.

Management of the first position. When the labour is retarded by a shrinking of the flexion movement, it may be facilitated by introducing the finger & touching the side of the os frontis during a pain, thus forcing the chin against the breast & causing the vertex presentation to be perfect. I may here remark that during the second stage the business of the practitioner is at the bedside he should not leave it. He must encourage his patient, keep up her spirits, give as favourable a prognosis as is consistent with truth, but make no promises. The head coming to the floor of the pelvis, the patient experiences intense agony, expresses herself as if she despaired of being able to pass alive through her labour, has nervous rigors, & for the great thirst which occurs at this time my remedy is cold water, which will be found to facilitate respiration, to allay the thirst & in some instances to make the uterine contractions more powerful. Rotation may be facilitated by placing the finger above the parietal protuberance, upon the temporal bone. The head coming against the perineum may cause laceration of the part. This rupture commences in almost all cases at the fourchette & proceeding backwards may involve the sphincter ani, & thus the vaginal orifice & the labia be thrown into one. Instances have been recorded in which the child was delivered through an opening into the perineum which involved the anus and not the fourchette. One case is recorded in which the child was delivered through the perineum, without the rupture involving the anus or the fourchette. Rupture of the perineum is most apt to take place in first labours than afterwards. If the patient of this character should restrain the bearing down efforts, the practitioner may by pressing against the occiput & the forehead

defer its passage through the vulva until the perineum has had time to become relaxed. The perineum should be supported, as the head passes out. It is sometimes necessary for the practitioner to sit for a great length of time holding the perineum of the child's head in such a manner as to prevent this for several hours.* After the head is delivered, it must be supported. Do not facilitate ~~rotation~~ restitution. Stop the bearing down efforts, for the tonic contractions are exerting to prevent hemorrhage. Rotation of the shoulders may be facilitated by the fingers. You may facilitate delivery by making traction effort. Draw with care; do not permit the neck to be twisted in the direction in which you draw. If the pubal shoulder is upturned the ~~pubis~~ you may make traction in the direction of the sacrum, & after it is fairly delivered make the body curve in the opposite direction i.e. towards the pubis. During the passage of the shoulders protect the perineum. After the delivery of the shoulders the delivery should be retarded, in order to allow the uterus to contract upon it and upon the placenta. To ascertain whether the uterus is contracted carry the child round so as to be free from the discharges of the mother, & place your hand on the abdomen & feel where the uterus is situated and what is its size.

* I think that in most cases, where the perineum is ruptured, the rupture commences about the point of the distortion of the hymen, in the recto-vaginal partition.

END
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